

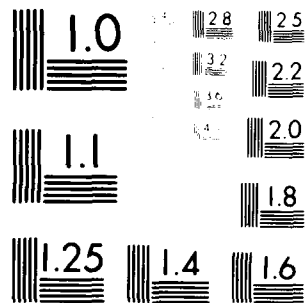
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THE FUTURE OF U.S. MARITIME POLICY

January 29, 1980

Submitted under
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The principal study members were the following:

Dr. Alvin J. Cottrell

Dr. Ray S. Cline

Mr. Michael Moodie

Prof. Francis West

Prof. Geoffrey Kemp

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EXECUTIVE SUMMARY

The purpose of this study has been not only to address some of the Navy's technical concerns and problems, but also to examine these matters within a wider strategic and geopolitical conceptual framework. For this reason, the study has gone well beyond strictly naval matters and addressed other important trends in the maritime area, as well as developments on land.

In the study an effort has been made to analyze developments in the global maritime environment which are changing the nature of that environment with important military implications. There are four principal factors which threaten to challenge the preeminent U.S. maritime role. They include:

- 1) A growing dependence of industrialized countries on the world's oceans for the transportation of vital products and materials;
- 2) A changing legal regime governing the world's oceans altering freedom of access traditionally enjoyed by major maritime powers;
- 3) The growth of Soviet naval power; and
- 4) The growth of sea denial capabilities of smaller coastal navies.

The combination of these factors raises two major questions:

- 1) How will access rights be affected and what would this mean for naval operations? and

- 2) What is the potential for successful attack on and disruption of maritime commerce on which the West has become so dependent?

Three factors influence access rights. First, the new Law of the Sea regime -- whether codified in a formal treaty or not -- is extending the concept of territoriality applied to the seas. The creation of Exclusive Economic Zones, for instance, is an example of "creeping jurisdiction." The impact of this trend is to raise the potential political costs required to secure access rights, and to generate questions about the circumstances when those costs would not be paid. This is not necessarily to imply that littoral states are, in some way, "greedy", but their increased concern is understandable in light of the fact that there is substantial growth in all activities in the sea.

An excellent example of this trend is what is now occurring in the North Sea. The region has been described as a "booming frontier", and "hive of economic activity." The amount of maritime traffic, oil exploration, fishing activities, and other maritime pursuits in the North Sea demand that some measure of control be imposed (e.g., traffic controls). If this is done, rights of access will necessarily be restricted to a greater or lesser degree, depending on the strictness of the controls. A similar situation obtains in other areas such as the South China Sea.

Second, the growth of the Soviet Navy can only be considered ominous not only for the United States, but, perhaps,

even more so by smaller littoral countries and maritime-dependent nations such as Japan and Norway. The Soviet Navy has expanded from a force designed primarily for coastal protection to a fleet capable of operating anywhere in the world. Of grave concern, then, is the fact that Moscow shows no signs of slackening its naval build-up. An aggressive Soviet shipbuilding program is gaining momentum with the construction of three new cruiser classes in Baltic and Black Sea yards.

Third, coastal navies of Third World littoral states of all sizes are increasing their naval capabilities. This trend reflects on one hand the continuation and extension of traditional conflicts to the seas. On the other hand, it also reflects an extension of sovereignty made possible by the changing law of the sea and a new way of thinking about maritime "territoriality." As a consequence, small states, such as Fiji, are improving their maritime capabilities in order to protect their new found maritime assets. At the other extreme, larger Third World states are expanding their naval capabilities to assist regional maritime control. India is a case in point: reports indicate that India has initiated an extensive naval expansion. It is spurred not so

much by the strength of India's political friends or foes, but by the perceived need to assert a naval presence in the Bay of Bengal and the Arabian Sea in order to protect India's maritime wealth and its 1200 island and ocean territories.

In part, the increased naval presence of the big powers in the Indian Ocean has compelled India to give a higher priority to its navy. The impact of the growth of Indian naval capabilities, and those of many Third World littoral states, will not be avoided by any of the big powers. Capabilities now being acquired by littoral navies are primarily directed toward the sea denial mission. Over time, the cumulative effect will be to increase the cost to any naval force that seeks to project power by sea or acquire maritime assets controlled by a Third World state. Certainly, no Third World state could defeat a super-power navy in a head-to-head fight. In most cases, however, this would not be the usual form of conflict. Rather, several Third World states may soon be, and some probably already are, in a position to inflict unacceptable costs on a big power that is exerting itself, not for military gain, but for political purpose.

How serious is restriction of access going to be? First it must be realized that the issue is one of increasing political (and perhaps economic) costs over time. The increase will be gradual. Nevertheless, some study members argued the possibility that restriction of access could be very serious indeed. There is a worst case, for example, in which transit

through straits is restricted in terms of no submerged transit, no overflight of the straits, no warship passage without notification, the assertion of a wide range of archipelagic claims sustained by the International Court of Justice and so on. In such a restrictive regime, the United States would clearly be hurt more than the Soviet Union, since the Soviet Union is a land power, less dependent on imports carried by sea and less required to employ naval forces.

Other analysts, however, take a more optimistic position on the question of rights of access, not because of what the United States is or could be doing but because of built-in factors. They would include the need -- whether it is now perceived or not -- to facilitate commercial navigation, and a growing realization -- whether states like it or not -- that the oceans cannot be managed by being cut into pieces. Another factor that suggests some optimism is the clearly increased political vulnerability of a strait state that denies access or is selective in the rights of passage it allows (although one can never assume that the state might not recognize what is in its long-term interest). Another is the simple fact that some elements of the new regime are already roughed out and generally accepted if not codified in a Law of the Sea Treaty.

Despite some cause for optimism, several problems remain. They include the question of traffic control by littoral states, and some believe that international bodies should make

rules that allow for national enforcement. Another cause for concern is offshore problems that are developing with respect to activities such as pollution control and fisheries management.

What, then, can be done? Clearly a Law of the Sea Treaty is the cheapest and easiest means to have a macro impact and impose some order on a situation that presently contains the seeds of chaos. In the absence of a treaty, the United States still has some options: greater coordination with its allies; testing policies of littoral states by sending units; and continually protesting in all relevant international forums the policies of states declaring unilateral restrictions. At the present time, the United States still has choices, and through a concerted effort it could have a major hand in shaping the maritime regime governing ocean affairs in the years ahead. In later years, that ability to choose may not exist.

With respect to the question of attacks on maritime trade, or "commerce raiding", some analysts believe that such a course might make sense for a smaller power. The concept is more important as it applies to oil from the Persian Gulf for the industrialized nations of Western Europe, Japan and the United States. How safe are these vital oil shipments? An analysis of these oil lines of communication reveals that, to the surprise of many, the flow of this vital resource is really most vulnerable at the beginning and end of the process -- at the well-head and on-loading sites and at the terminals. The main

maritime dimension of the lines of communication is, at present, less vulnerable. What may change this state of affairs, however, is a fundamental geopolitical shift on land, e.g., a radical or pro-Soviet government installed in the Republic of South Africa.

Appreciation of this fact is not widespread. Among defense analysts, especially among naval analysts, there has been a tendency to compartmentalize strategic problems into geographic and functional categories. One example is the attempt to secure arms limitations in the Indian Ocean region. The negotiations addressed naval arms only, with no regard for how developments along the Indian Ocean littoral would affect the strategic balance of the area. What is required, therefore, is an integrated concept relating land, sea, and air capabilities.

With the present geopolitical configuration, the concept of "commerce raiding" should not be overemphasized. In the context of a regional conflict, however, some form of commerce raiding between local countries may be more likely.

More serious than the question of commerce raiding is the relationship between developments on land and sea. The recent dispatch of two carrier task forces to the Arabian Sea in the wake of the crisis in Iran and the Soviet invasion of Afghanistan highlights the fact that the United States has often responded to events on land by actions on the seas. Somewhat curiously, however, there has just now been a new found awareness that the most important parts of the oceans are

those near the land (usually far distant from the United States). This has not been a U.S. Navy perception for a long time. Concentration on the sea control mission for the last decade has left the U.S. Navy and other U.S. defense policy-makers insufficiently sensitive to the fact that to understand the emerging maritime environment, one must appreciate geopolitical shifts on land. An excellent example is the impact on naval operations in the Indian Ocean that the Soviet Union now enjoys by virtue of the fact that it can operate jet aircraft from the facilities at Kandahar, Afghanistan. The United States should realize that it must pursue its foreign policy right up to the border of the Soviet Union. It cannot rely only on a naval capability that is, in some unspecified way, expected to insulate the impact of events on land from our friends and allies.

The lessons for the United States are clear. First, the United States must prevent those geopolitical shifts on land that are inimical to its maritime, especially naval, interests. Political changes on land can have a decisive impact upon the balance of maritime forces, and, in theory, it suggests that a position of maritime superiority could rapidly shift to one of maritime inferiority if control of the land mass were to change. Thus, while the United States at present would appear to possess maritime superiority in the Persian Gulf-Indian Ocean region due to its superior maritime air capabilities and support facilities, a future Soviet military presence in

Iran or on the Arabian Peninsula could decisively change the balance. That is, the Soviets would have naval aviation bases to compete with the U.S. naval air forces. This is a very significant development to which adequate attention does not appear to have been given in policy circles, in the scholarly community, or in the media.

Second, the United States must realize that to effectively prevent such shifts it must utilize instruments on both land and sea. This realization suggests the need for an infrastructure to support both land and maritime operations. Infrastructure in this context means bases; the United States must reverse the present trends that find its overseas base structure diminishing while that of the Soviet Union is increasing. In many cases, especially in the Indian Ocean, our naval presence will lack credibility in local perceptions if we do not have adequate regional infrastructure. In short, many local leaders will not believe in our permanent presence if we do not possess the facilities which indicate that we intend to remain in the area and not just sail away after the immediate crisis wanes.

Third, the United States must recognize that more Third World assertiveness in maritime affairs, combined with growing Soviet naval capabilities, could undermine U.S. maritime superiority more rapidly than expected, especially if we do nothing for remaining U.S. friends in the Third World. The power of the Soviet Union may now be peaking since it will confront

serious domestic issues in the latter half of the 1980s. This may mean that during the next five years Moscow will attempt to exploit its present "window of opportunity", pressing its present relative advantages.

In this situation, the United States must redirect the thrust of its recent history. Maritime questions could be the catalyst for future conflict. If the United States does not reassert its political will, provide itself with more maritime instruments in the form of naval forces, and make every effort to minimize the impact of land-based developments on the maritime environment, the consequence of a conflict arising from a maritime problem could be extremely serious.

The Concept of Maritime Superiority

This study has assessed the concept of maritime superiority articulated by Admiral Thomas Hayward, Chief of Naval Operations, and the eight principles he has adumbrated on which it must be based.

The concept of maritime superiority must include elements beyond naval force structures and balances, especially:

a) a given geographical context; and b) the changing nature of the international system and the concomitant diffusion of power. Above all, to answer whether maritime superiority is a significant concept in the world today, one must have a coherent view of the function of naval forces in contemporary international politics.

In order to define the role of naval forces, however, it is necessary that there also exist a coherent broad national strategy providing a conceptual framework within which the utility of naval forces for the pursuit of national goals is expressed. Without such a framework, the goals of foreign policy cannot be visualized, the strategy for utilizing various foreign policy instrumentalities (including military forces) to achieve those goals, cannot be identified, and their complex interrelationship cannot be appreciated. In such a vacuum, the concept of maritime superiority is rendered meaningless.

Furthermore, the Carter Administration -- unlike other post-war administrations -- is without such a strategic conceptual framework. The policies of containment and the Nixon-Kissinger doctrine of a "triangular world" -- whether they were correct or not -- are both examples of the type of conceptual underpinning to foreign policy that the present Administration lacks. The United States cannot and should not now return to the policies of the past, but it must adjust to the rapidly changing international environment with a policy framework and strategy for the execution of the policy that maximizes the effectiveness of the resources available.

Finally, American dependence on access to regions and raw materials -- just like Britain's in the 19th century -- demands that it seek international stability as a primary goal of foreign policy. The United States must -- as Britain did -- attempt to achieve that stability not through the constant

application of force, but by the creation of an international milieu that favors stability. Armed forces -- especially naval forces -- can be useful in this regard by manifesting U.S. power globally as a signal of an American commitment to its global responsibilities. It is in this context that the concept of maritime superiority must be considered.

With respect to the contention that a war between NATO and the Warsaw Pact would inevitably be global in scope, the implications of this statement are extremely serious, for they undercut the "swing strategy." The strategy envisions the movement of naval forces from the Pacific to the Atlantic in the event of a NATO-Warsaw Pact conflict. It also reflects the tendency of U.S. policymakers to view national strategy in regional compartments rather than in global terms. Indeed it is credible to argue that only by putting substantial pressure on the Soviet Union in the Pacific theater could critical conventional NATO force deficiencies in central Europe be compensated for until those forces were resupplied. The pressure that could be applied would initially have to be provided predominantly by U.S. naval, marine, and air power. This need to apply pressure on the Soviet Union in the Pacific theater requires the United States to alter its concept of the so-called "swing strategy."

On the other hand, the notion suggested by Admiral Hayward, i.e., that a NATO-Warsaw Pact war will be a global conflict, forces strategic planners to think globally. While some of

his other suggested principles of maritime superiority may have difficult problems associated with them, this assertion regarding a NATO-Warsaw war could lay the groundwork for the construction of a useful conceptual framework for defining the future role of U.S. naval forces, precisely because it automatically forces us to think of strategy within global conceptual framework rather than in compartmentalized terms as seems presently to be the case.

An alternative approach to Admiral Hayward's concept of maritime superiority must be considered, and several components must be a part of that concept. First, situational components must be included:

- 1) The state of conflict: The demands on naval forces are much different in wartime than in peacetime. The roles they must play, the goals they seek, their operational requirements are all altered once a conflict begins. In attempting to define maritime superiority, therefore, it is important to distinguish whether it is for a wartime or peacetime environment.
- 2) The potential enemy: A basic question that must be asked is, "Superior to what?" Clearly, the concept of maritime superiority has considerably different implications if it is applied to the naval balance with the Soviet Union from those when it is applied to that with a Third World littoral state. It is also necessary to ask whether, in fact, the concept is to be viewed in the context of a balance with another given force or in terms of the need for U.S. naval forces to perform a given function irrespective of the potential enemy.
- 3) Geography: Maritime strategy and operations cannot be divorced from developments on land. It is absolutely necessary, therefore, when assessing maritime superiority to place it in a global context and appreciate how it might be altered by land-based events. Where the maritime superiority is to be achieved is important, whether globally or in a specific region.

Other components that must be included in attempting to identify maritime superiority are physical assets. The components include the relative quality of manpower, the degree of technological sophistication of equipment, and the numbers of units. The United States faces difficult trade-offs in striking a balance among these physical components. Should it, for example, opt for greater numbers of less sophisticated units, or move in the direction of fewer numbers of highly capable ships? Should it direct more funds toward trying to recruit skilled manpower, or put the money into better technology? The answers, of course, will be determined by what U.S. naval forces are expected to do, as well as what potential adversaries are doing. A clear answer, however, demands a clear conception of requirements, which is only possible with a coherent national security strategy.

Two other physical components that also must be included are the naval forces of allies and the merchant marine. American allies may not be able to fill all the gaps, but there are contributions they can make (e.g., mine clearance). Allied navies contain respectable strengths, and they must be exploited.

There are some problems, however. For example, to what extent is it in the U.S. interest to emphasize division of labor rather than duplication of effort among allies? In the case of America's NATO allies, the problem is compounded by

the question of regional responsibilities. To what extent should or will the responsibility of European navies be extended beyond the NATO theater, although their national interests are so clearly involved?

It was also argued that the merchant marine of the industrialized democracies could be an important element in the maritime equation. The contribution of these merchant fleets to national security and to naval operation in particular has been too long ignored. This stands in strong contrast to Soviet practice, which has demonstrated a close relationship between its navy and merchant marine.

The current problems facing the merchant marines of the West, however, are severe. They include unavailability of adequate numbers, poor coordination between defense planners and the industry, insufficient planning by Alliance officials for exploiting the merchant marines, and inadequate attention to technological requirements. These must all be remedied. If not, a component of the maritime balance will be severely lagging and compensations for this lag in other areas will dilute those capabilities, making them less effective.

Finally, there is the question of the time frame. Will there be adequate warning of a conflict, or will it erupt suddenly? Will the conflict be short or protracted? Clearly, whether the United States can assert maritime superiority in a given conflict depends on the time frame. Inadequate warning and a short conflict would make it extremely difficult

against some opponents in some geographic regions. The ability of the U.S. Navy to bring its power rapidly to bear anywhere in the world is diminished by insufficient resources. Only if the Navy is given sufficient numbers will it be able to make timely responses.

What sufficient numbers are depends on what the U.S. Navy will be expected to do, which in turn depends on America's national security strategy. Without such a definition of the role of maritime forces, the elements, numbers, manpower, timely responses, geographic context, and the other components of maritime superiority mean little.

It is important to note that the notion of maritime superiority is enshrined not only in Navy thinking, but in that of all American defense planners. It is the only area in which superiority, rather than sufficiency, is the stated goal. Yet, there are "various sects within the religion", and they speak with many voices. This is one reason for the present inability to define the needs for maritime superiority with precision.

It is this confusion that makes the kind of statement prepared by Admiral Hayward important. Principles will be debated, revised, and refined, but there remains the need for principles of some kind.

While debate rages about the proper force structure of the Navy, little systematic attention is paid to how to use it. As a consequence, the ability of the U.S. Navy to fight successfully is now being seriously questioned by many, including our friends and allies.

The comparative trends of the American and Soviet navies are particularly worrisome. While the size of the U.S. fleet has been decreasing, the Soviet Navy seems to have won its argument of the early 70s over increasing the number of conventional vessels. This hardware is now entering their naval inventory, and one participant estimated that the Soviet surface fleet will encompass 10 battle groups by the end of the next 25 years. In addition, there will be 200 nuclear submarines (of which 60 will be SSBNs), and the Alpha-class submarine could represent a particularly important breakthrough.

The Soviet Navy is also moving toward a sea-based tactical air capability (with fixed wing aircraft), afloat command and control, and greater endurance in fuel and weapons. The result is a convergence of wartime requirements and political utility. The Soviet Navy in the coming years will be a highly tangible threat. Nevertheless, the Soviet military is still dominated by the Army, and the Navy remains somewhat tied down to the defense bastions. Its primary interest is the battle for the Norwegian sea. It is in this context that the Soviet Navy might harass Western SLOCs to pin down Western forces for their defense, thereby diverting them from a

Norwegian Sea confrontation. Simultaneously, if one assumes such a conflict does not occur, the Soviet Union will be acquiring a fleet that will be increasingly effective in support of Soviet foreign policy in the Third World.

The United States must not forget, however, that its own actions will influence Soviet naval requirements. The United States could pose a permanent threat to those bastions so important to Moscow, directing Soviet attention from activities elsewhere. Whatever the specific action, U.S. defense planners must shake off the defensive frame of mind that has dominated for decades. The containment strategy, for example, was offensive in the sense that it sought to contain the Soviet Union right up to its borders and took appropriate action to accomplish it. To be sure, it is difficult in this context to define what is "offensive" and "defensive." Rather than offensive, perhaps it would be better to describe the need as one of an "active" policy. Whatever the adjective, it is clear that the United States must better exploit the power that is inherent in its naval forces. At the same time, it must take those steps necessary to ensure that the maritime balance does not increasingly tilt toward the Soviet Union.

To do so, however, requires the outlay of resources for naval systems and other requirements. These resources are, unfortunately, not only sought by other sectors of the defense establishment, but also by other segments of the society whose claims are also compelling. There was considerable pessimism

among participants that the American people and their representatives would accept arguments for greater defense spending. The problem is especially difficult with respect to naval forces, since they are highly instrumental in the early phases of a conflict or in crisis management situations that head off a conflict. In either case, the benefits they provide are not always readily apparent.

Peaks in U.S. defense spending have often been achieved because crises released new sets of monies. Will crises rather than a systematic analysis next stimulate an increase in the defense budget? In the wake of the crisis in Iran and the Soviet invasion of Afghanistan there appears to be a mood in America more conducive to accepting greater defense expenditures. The orientation of the Administration has undergone a remarkable transformation. Whether this mood will last beyond the current crisis, however, remains to be seen. Will the Administration sustain its efforts to increase the defense budget once tensions ameliorate? Will the American people accept the inevitable sacrifice entailed in greater defense spending when the needs are not so vibrantly discernible as they are at present? Clearly, these questions can only be answered in the months and years ahead.

Future Force Structure and Deployment

The study has also considered in some detail the question of force structure and capability. One cannot assume that the future will be better. The United States is entering a

time of grave uncertainty, if not peril, and while the problems are increasing, the size of the defense budget is not, at least not adequately so. The U.S. Navy will evolve in accordance with the national mood, which did not seem to be supportive of massive defense increases.

With respect to specific naval capabilities, the following points were highlighted. First, there seems to be a fixation in some quarters for building greater numbers of cheaper ships for convoy protection. This could be a misallocation of whatever resources the Navy has available. Rather, the Navy's anti-submarine warfare and anti-air warfare, particularly its anti-missile capability, needs serious attention.

Second, the cruise missile represents a radical breakthrough with important implications for the evolution of the Navy, although the Navy has not yet really thought through those implications.

Finally, there are fundamental problems associated with the rapid deployment force. While the President now seems to be committed to the creation of such a force, it will be some time before it is fully operational. A serious problem would be coordination of naval units with RDF forces airlifted to the site of an operation.

We considered the two themes of defense expenditures and specific naval capabilities.

As the United States enters the 1980s, it faces perhaps more widespread commitments than ever before. How will the

United States discharge those commitments? Even if there is a substantial increase in defense expenditures -- and, as mentioned earlier, there is doubt whether support for such an increase can be sustained beyond the present crisis -- what will the extra money be used for?

In the first place, serious thought must be given the nuclear deterrent. In the past, the U.S. Navy has compartmentalized its thinking about the SSBNs and their relationship not only to other naval forces, but to other arms of the strategic triad. In this sense, the Navy and the Air Force have thought about deterrence in radically different ways. In the future, especially in terms of a warfighting capability, all U.S. Strategic systems will have to be more secure and more flexible. Given these requirements, a naval based system, such as Trident II, is extremely attractive. The future of the naval component of the U.S. strategic forces must receive careful attention. Unless strategic forces are broken out from conventional forces across the board, however, it must do so in the context of overall naval requirements.

On the conventional side, the argument is made that some trade-offs will have to be made between numbers and types of ships. The apparent demands on the Navy seem to require that an increase in numbers is necessary. High cost, however, prevents all of these from being highly sophisticated, multi-capable units. Some mix therefore will be necessary. To concentrate completely on the nature of the mix, however, is

not a fruitful way of addressing the problems at hand.

It may not be as difficult as some believe to secure Allied cooperation in the maritime sphere to help alleviate the problem. There is little disagreement that U.S. Allies in Europe can and should do more, and that it was not unreasonable to expect that they increase their assignments within the area of their treaty obligations. Europeans will not likely increase their assignments outside the NATO area, but a trade-off with the United States doing more outside European waters (especially in terms of securing the oil SLOCs) with the Europeans being more active in-theater may be desirable and attainable.

In the Pacific, Japan could also assume a greater share of the burden. It could, for example, procure more frigates for wider ranging ASW, or improve its reconnaissance capabilities with additional P-3s and/or E2Cs. Despite the legal and political constraints on massive increases in the Japanese defense effort that may inhibit these measures, there are, nevertheless, indirect actions the Japanese could also take. Larger financial contributions to base maintenance and labor costs at American facilities is one example. Thought may also be given to restructuring the present status of forces agreement so that Japan may pay for more of the American effort.

Whatever decisions are made with respect to responsibilities of allies and future force structure of the U.S. Navy,

it would not be productive to base those decisions on specific scenarios. Rather, it must be assumed that the United States and the Western alliance will need naval forces, but where, when, and under what circumstances that need is made manifest remains unknown. As a result, naval forces should be sufficiently complex and flexible to operate in a range of areas and under a variety of conditions.

The future success enjoyed by U.S. naval forces in such situations will depend in large part on what those naval forces will be asked to do in combination with other instruments of U.S. foreign policy. This, in turn, depends on what kind of world we want it to be and the role we want the United States to play in that world. The questions are easy to ask, but extremely difficult to answer. The answers depend on a clarity of view and strategic thought, a realism divorced from wishful thinking about events in the world and a broad foreign policy framework identifying the interrelationship of American foreign policy goals and instruments. Finally, it requires a willingness to take appropriate action before a confluence of crises gives a momentum to events that cannot be halted irrespective of American action. The future of the U.S. Navy will rest on the American ability to make difficult decisions in the years ahead.

INTRODUCTION

The United States has often used its naval forces as an instrument of American foreign policy. In wartime and peacetime, the special attributes of naval forces have been employed to secure specific U.S. national interests and the broader American goal of international stability. However, major changes in the international environment, and in the maritime environment in particular, are now raising serious questions about the future utility and applicability of naval power. Geopolitical, military, economic, and technological in nature, these changes have created a considerably more complex setting in which naval forces must now operate. Their cumulative impact is the creation of new problems and an intensification of old ones that must now be confronted by American policymakers, both military and civilian.

This report addresses the nature of the changes at hand and their implications for future operations of American naval forces. It focuses on the problems to be overcome at a time of shifting geopolitical trends and increasing economic constraints. In Chapters I and II, a broad perspective is provided, identifying the emerging international environment that provides the context for naval operations. Chapters III through VII present a more detailed examination of specific issues, ranging from national and naval strategies to technological issues and U.S. budgetary considerations.

International and domestic trends give no cause to be sanguine about the future of American seapower. This report is intended to identify the issues that must be addressed if the United States Navy is to remain an effective instrument of American foreign policy.

MARITIME POWER AND THE FUTURE

An examination of the situational environment and the changes influencing the future of seapower. This paper addresses the concept of maritime power, distills historical lessons that remain applicable to the present situation, and emphasizes the political vision and realism that must accompany the exploitation of maritime assets.

MARITIME POWER AND THE FUTURE

INTRODUCTION

Over the coming decade the United States Government must make decisions that will influence the nature and purpose of U.S. maritime policy and the configuration of U.S. naval forces well into the 21st century. Since the 1960s, a number of factors have changed the nature of the maritime map and have begun to challenge the preeminent role of the United States. These include the growth of Soviet power and the emergence of other power centers in the less industrial world, the diffusion of nuclear and non-nuclear technology, new legal constraints on maritime access and growing demands upon the world's maritime resources. The result of these interactions is a state of confusion concerning the future role and nature of U.S. maritime policy and maritime power.¹

There are two basic reasons why the United States needs to formulate a more coherent maritime policy at this time. The first relates to the challenge to U.S. interests posed by the growth of Soviet military power and its increasing maritime activity. The second relates to more general long-term interests that are economic, political and even philosophical in nature and have to do with America's role in the world. In this latter context, the future of U.S. maritime activities cannot be decoupled from overall geopolitical trends and the long-term effects of three variables, namely, population dynamics, technological innovation and the supply and demand for natural resources.

It will be argued that, regarding the Soviet challenge, the United States and its allies have, in theory, ample assets at their disposal for meeting and, if necessary, overcoming Soviet competition or aggression provided Western leaders correctly understand the nature of the challenge and are prepared to pay the necessary political price to counter it. With regard to the second set of long-term interests, it will be argued that the United States, as an advanced, technically sophisticated society, has reached a critical phase in its development and that the next twenty to thirty years may well be decisive ones for determining whether or not the superiority of the American system will continue or whether other coalitions of political entities will replace the United States as world leaders. The thesis to be advanced in this second case will be that, irrespective of the immediate military and economic threats posed by present Soviet activities, the historical survival of complex political systems of "empires" has depended upon a combination of factors, including leadership, ideology, economic, technical, and military assets and skills, and environmental factors, including geography. In this regard, the United States has many of the inherent prerequisites for perpetuating and expanding its international power. However, a singular lack of imagination by its leaders is eroding the American position in the world. This is no better demonstrated than by the reluctance of the United States to exploit its present, but declining superiority in the technological and economic arenas of the maritime environment and outer space.

The linkage of maritime activities with the exploration of outer space is an essential ingredient of this thesis, and it will be argued that there are remarkable similarities between the two environments and that a study of the evolution of maritime empires of the past and present provides important insights concerning the future exploitation of outer space. For outer space poses the ultimate challenge for the U.S. political system, and in global terms the political entity that exercises control over outer space will have similar advantages to those bestowed upon countries which first exploited new continents and sea routes in the Age of Discovery.

In looking to the future, it can be expected that the growth in the demand for resources and the impact of new technology will lead to a new maritime era involving, on the one hand, greater political constraints on access to traditional markets and, on the other hand, new exploitation of remote maritime frontiers, including the deep oceans and the Polar regions. The new era, like all others before it, will involve competition and possibly war between antagonistic political units. In this context, there is nothing preordained about American superiority in these environments. Unless the United States has the vision to pursue its interests and actively seeks to maximize its economic power in the remaining unrestricted maritime areas of earth and in outer space, it could become a second-class power by the early 21st century.

The tone and approach of this study, therefore, assume the perpetuation of an essentially competitive international system in which political coalitions will continue to change, military conflict will continue to occur, and the establishment of effective international authorities capable, in the last resort, of imposing their will on dissident groups will continue to be illusory. While such a forecast of the international political environment does not rule out greater international cooperation at many levels of activity, it does assume that in times of serious economic, military or even environmental crisis, the tendency will be for individual political units to put their own interests first and therefore rule out the achievement of universal solutions.

In addressing the above sets of issues, the terms "maritime policy" and "maritime power" will be stressed because they cover both the commercial exploitation of the seas as well as the classical role of naval power. The basic issues to be addressed in this paper relate primarily to the emerging international environment and the manner in which U.S. maritime policy should adapt itself to new conditions. While all the major elements of maritime power - military, technical, geographical and economic - will be mentioned, the initial focus of this paper is upon the political, economic and technical dimensions of maritime power since these are the factors that ultimately influence the future role of navies and other maritime forces.

In establishing this relationship it will be argued that many of the trends we detect today have long historical antecedents which highlight the complexities of maritime power and the need to examine the interaction of many elements of geopolitics, including the fact that major changes in maritime power can sometimes be brought about by changes in the configuration of land power, an observation that serves to downgrade superficial distinctions made between land and sea powers.

The following sections of this paper cover all of the above issues. The next section attempts to clarify the terminology of this subject, followed by a discussion of the historical legacy upon which modern ideas of maritime power are based. The emerging, and in some ways unique, maritime environment is then considered, followed by more specific discussion of U.S. maritime interests.

Concepts and Definitions of Maritime Power

Maritime power, as a concept, requires careful definition in view of the wide-ranging interpretations of what it means. Is "maritime power" an attribute which states, or any other political units exercise over each other, i.e., by exploiting their maritime "assets" do they influence the behavior of others? Or does it refer to a set of conditions which states have to meet in order to qualify for the label, a "maritime power," or, to put it another way, can a state be a maritime power irrespective of its political, military, and economic relations with other states? In short,

does the term "power" in the phrase "a maritime power" mean that a state uses the sea to exercise power over others, or does "power," in this context, refer to a more neutral condition in which the term is synonymous with "state" or "nation"? Thus, if we say Country A is a "maritime power," do we mean it uses its "maritime" attributes, whatever they are, to pursue its power relations with other states, or does it mean that Country A is a "maritime power" because it makes use of its maritime attributes to survive and prosper irrespective of its overall status in the hierarchy of world power?

There are several reasons why it is important to clarify this point. First, there is genuine confusion concerning the meaning of the term; hence some attempt at a definition is in order. Second, there is confusion in classifying those countries whose economic survival depends upon the uses of, and therefore control of, certain areas of the sea and those countries who use the seas, less for short-run economic survival and more for the projection of political and military power, which, although having potential long-term economic benefits, is not the primary rationale for exploiting the seas in the first place.

This confusion is further compounded if terms such as "seapower" or naval power are introduced for, despite some obvious similarities, there are important differences. Thus, depending upon one's definition of "maritime power," it can be argued that a great seapower need not be a great

maritime power, even though one usually follows from the other. It can be argued that a seapower is a state that has formidable naval strength ("naval", in this case, meaning ships and shipping capabilities which permit the extensive use of military force for certain missions). In contrast, a maritime power can be defined as a state that makes extensive use of access to the sea and sea resources to pursue economic activities with other groups which, in turn, influences its power relations with them. These economic activities can include the transportation of land-based goods and services by sea, or the exploitation of sea-based resources. By these definitions there is, in theory, no need for a major maritime power to develop a navy to protect its maritime activity, even though in practice all great maritime powers have either developed naval forces to protect their maritime assets, or they have been eclipsed by adversaries who either threaten their access to land-based resources and trade or challenge their commercial activity at sea by interfering with their rights of navigation. Similarly by these definitions a great sea power need not be in theory a great maritime power, especially in the present age of nuclear technology when deploying military forces to sea can be justified entirely outside the maritime context, even though the evolution of most (but not all) of the great sea powers has grown out of concern over the protection or extension of maritime activities.

Before proceeding with a more formal classification of "maritime powers", "seapowers", etc., it is appropriate to present a list of definitions of the terms used so far to explain why some will be used in this text and why others will not.

maritime - of or relating to navigation or commerce on and in the sea or on the seabed.

naval - of or relating to ships and shipping.

a "power" - a state that has a significant ability to influence the behavior of other states within regional or international hierarchies by the ultimate use of sanctions.

maritime power - no one definition readily comes to mind, so three will be listed, then discussed:

- (1) - a state that makes extensive use of the seas and/or sea resources to sustain its economic growth.
- (2) - a state that makes extensive use of the sea and sea resources for either its economic growth, its political states, or national security, or a combination of all three.
- (3) - a state that makes extensive use of the seas and/or sea resources to sustain its economic growth and to project its political and/or military power to those overseas regions necessary for its economic well-being or national security.

Each of the three definitions of maritime power listed above pose different problems. The first definition is exclusive and narrow, and to this extent is similar to the

classical dictionary definition of "maritime." It refers to "extensive use" of the sea and sea resources to sustain economic growth. However, it tells us nothing about power hierarchies, only about a specific dependency. Thus, by this definition, any state that makes extensive use of the seas is a maritime power, e.g., Iceland, or Fiji. Indeed, if proportional uses of the sea for economic survival become the primary criterion for determining the maritime status of a country, Iceland would outrank the United States. It would seem, therefore, that this definition is inadequate if the concept "power" is included in the term.

The second definition differs from the first in that it presumes to cover those states that use the seas for more general goals than economic growth. Thus this definition could cover a country which had little economic interests in the maritime arena, but used the seas for the projection of military power. In extremis, it could include a country that possessed only one or two nuclear powered and nuclear armed submarines which, in theory, could project enormous military power from the sea in many regions of the world. The problem, then, with the second definition is that is too inclusive and does not discriminate enough among a wide group of countries which, by its definition, would qualify for the title of "maritime power."

The third definition reflects an attempt to bring more precision into the term without being too exclusive. It assumes that the economic exploitation of the seas is

an essential element of being a maritime power but that it, alone, is insufficient. To qualify for the designation of "power," a country must also use the seas to project its political and/or military power to those overseas regions where it has major economic and political interests. Thus, by this definition, a major maritime power would have to have the ability to protect its maritime interests against most political, economic, and military threats. This definition raises difficult questions concerning the status of countries like Japan, who by most criteria, are formidable maritime powers except in their ability to project military force to secure their overseas maritime interests. The irony with Japan is that, while it is in most respects more truly a maritime power than the United States or the Soviet Union, so long as it remains dependent upon the United States for the ultimate protection of its assets, it cannot presently be classified as a major maritime power.

What emerges from the above discussion is that in order to qualify for the status, "a maritime power," a country must fulfill two conditions: ~~significant dependency on the seas~~, and significant ability to enforce its wishes if others challenge its maritime interests. Excluded from this category, therefore, are those countries who either meet none of the above conditions, or only one of them. This suggests, in turn, that there is no important distinction at any point in time between countries who, by this definition, are full-fledged maritime powers: those who have the

ability to project power overseas but have few maritime interests; those who are dependent upon the seas and aspire to be maritime powers; those who depend upon the seas but can never, realistically, become maritime powers; and those who are neither dependent upon the seas nor aspire to be maritime powers.

If these categories are now applied to the present nations of the world, what pattern emerges? Let it be assumed that each country fits into one of the following five categories:

- (1) maritime power
- (2) maritime capable; not maritime dependent
- (3) maritime dependent; aspiring maritime power
- (4) maritime dependent
- (5) land-locked and non-maritime dependent.

If the presence of maritime power projection (categories 1 and 2) is termed seapower, and the absence of such capabilities is termed no, or limited seapower (categories 3, 4, and 5), then the list can be refined as follows:

- (1) maritime power (maritime dependent; significant seapower)
- (2) seapower (significant seapower; little maritime dependency)
- (3) maritime dependent - aspiring seapower
- (4) maritime dependent - not aspiring seapower
- (5) non-maritime dependent - no seapower

How, in fact, would one proceed to classify the countries of the world based on these criteria? In simplistic terms, it can be argued that certain Western industrial powers fall into the first category of countries (1), while the Soviet Union falls into the second category (2). Thus,

whereas Britain, France, West Germany, Japan, and the United States must have access to overseas' resources and markets for their economic survival, the Soviet Union does not, in extremis, need similar access except as a bonus. Its primary interests in maritime activities relate to its political and military conflict with the Western industrial powers and China. However, an analysis of this classification suggests that, in reality, there are considerable differences among the traditional "maritime" powers. For example, the United States and Japan, although nominally two maritime powers sharing a common political ideology (which, in turn, has resulted in similar economic systems and a shared concept of military security), are in many ways very different. This is best illustrated by considering an extreme case: in the event that all sea communications to both the United States and Japan from the rest of the world were severed, the United States would probably survive as an industrial democracy, whereas Japan would not. For the United States, despite its massive overseas involvements and its growing dependency on overseas oil, is and will remain a vast, well-endowed continental power that has sufficient indigenous resources to sustain its current population at a tolerable level of welfare. Thus, although a policy of enforced continental autarky would cause very serious short-run dislocations in the economy, which, in

turn, would have profound political effects, there is no reason why the United States could not survive as a strong industrial power, albeit with a very different set of limitations on economic growth and, therefore, material expectations. Given its geography, it would also be relatively immune from military attack unless with nuclear weapons.

Japan, on the other hand, is much less capable of such long-term survival given its lack of indigenous resources and large population. Furthermore, its close proximity to China and the Soviet Union would place its security in jeopardy in the event of aggressive ambitions by either of its neighbors.

To carry this argument a stage further, we could distinguish between Japan, an insular, homogeneous, industrial state totally dependent upon external seelines of communication for all major natural resources, and the members of the European Economic Community (EEC), a heterogeneous group of industrial and semi-industrial states adjacent to the Soviet Union, with considerable indigenous natural resources but not sufficient to maintain their current economic status. Thus one means of classifying various states would be to rank order them according to maritime dependency in peacetime and maritime dependency in wartime, the difference between the two orderings would reflect the degree to which dependency was a "luxury" or a "necessity." The point being that a country like the United States or the Soviet Union could rank high in the peacetime column out of preference, but rank low in the wartime column because

of abundant indigenous natural resources. In reality, the distinction between "peace" and "war" is too arbitrary.

Although there are similarities between the United States and the Soviet Union in that both are, in effect, continental powers, the differences are equally important. The United States is generally classified as a maritime power in part because of its early history as a maritime country; in part because of the massive increase in the size of its naval power and overseas deployment during and following World War II; in part because of its extensive and growing overseas trade, and in part because its most important friends and allies are maritime powers or maritime dependent powers.

The Soviet Union, on the other hand, does not have this history nor is it or its allies presently as dependent on the seas (except for fish supplies) as the Western countries. Yet, the Soviet Union has a growing naval and merchant marine capability and is the world's number two seapower. This raises an interesting question. Does a great seapower eventually become, pari passu, A great maritime power by default or as a result of the deliberate pursuit of commercial maritime activities once it has become a seapower? To some extent, this depends upon the definition given to the status "great" seapower. In one sense, it could be argued that any country that deployed one nuclear-powered submarine armed with nuclear missiles would, in contemporary world terms, be a "great" seapower since it would be a

"state having formidable naval strength by the most familiar yardstick of military strength, i.e., firepower. Yet somehow this measurement does not seem to square with common sense, for by this criterion, Britain and France, with their small SSBN fleets, have greater comparative naval strength today vis-a-vis all states in the world except the United States and the Soviet Union than at any time in their history. The problem is that neither Britain nor France can use its SSBN forces very effectively in the context of peacetime commercial and military power relations with other states. Only in the event of major crisis or war would the SSBNs have a role, and even then it is assumed they would be little use against low-level threats. To this extent, they are very different elements of seapower than the traditional gunboat.

The contrast between the gunboat as the symbol of a great power's willingness and ability to intervene to protect its interests and the SSBN is important. Thus the appearance of a British gunboat in an Arabian port in the nineteenth century represented a different type of power than would be the case if Britain today deployed an SSBN into the Indian Ocean and announced it had targeted an Arab country with nuclear weapons. In fact, it is incredulous to think of the circumstances under which the latter event could take place, except in the most dire of circumstances.

It therefore may be more sensible to refer to a major seapower as a country that uses the sea on a continuing basis to exercise power relations with other states. This is not to be confused with the term "power projection," which has a more limited meaning. "Power projection" is one of many methods of exercising power. Seapower can therefore be exercised in many ways.

LESSONS FROM THE PAST

The Contemporary Problem

The 1973 Arab-Israeli war and the subsequent oil embargo has resurrected the question of the supply of strategic war materials to the forefront in military planning. For the first time since World War II, serious questions have begun to be asked about the security of overseas strategic resources and, more specifically, those that come from conflict regions in the less industrial world. The concern is based upon three related phenomena: the growing dependency of the advanced western economic powers upon the raw materials of the Middle East, Africa, Asia and Latin America; the relative autarky of the Soviet Union for most of these same resources; the diminution of effective western military power and the parallel growth of Soviet military capabilities in the regions upon which the west is becoming so dependent.

The most obvious example of this resultant change is the oil dependency upon the Persian Gulf, but it is matched in some respects by the European and Japanese dependency upon minerals from Africa. As a result of these very significant changes, it has become fashionable to draw lines upon maps showing the growth of these dependencies and the need to protect the lanes of communication from the sources of the materials to their destinations. While this concern is appropriate, the problem is essentially a short-term phenomenon, serious, perhaps critical, but short-term nevertheless. The reasons for this optimism is based upon the assumption

that if we learn anything at all from history it is that over time all such resource dependencies can be overcome provided there is sufficient political enlightenment and will to bring about change. For, over time, new sources of raw materials and, therefore, new lines of communication can be established; new technologies can reduce existing dependencies upon particular materials; new political alignments may reduce the strategic vulnerability of existing sources.

The Lessons of History

Since earliest recorded times, the seas and waterways of the world have been used to secure access to raw materials and markets. It has been suggested that maritime powers such as the Phoenicians sailed well beyond the confines of the ancient world and may even have circumnavigated Africa. Whatever the truth, it is clear that in the ancient world there was an understanding of the importance of maritime access for both economic and political-military purposes. The major constraint on maritime activity in those days was technical rather than intellectual.

To fully appreciate the events that led up to the Age of Discovery - which, it is argued, is the period that has great relevance for today - a brief reminder of the economic history of the previous 1,000 years of maritime activity is in order. During the heyday of the Roman Empire there was a flourishing trade with the East involving both land and sea routes, of which Silk Road was perhaps the most famous legacy. Roman, Arab, Persian, Indian, and Chinese

merchants all made great profits out of the trade. However, following the fall of Rome in 420 AD, the horizons of knowledge about the sea were restricted to coastal trade which flourished in Europe and throughout the Middle East and Asia, with two important exceptions. There were the exploits of the Vikings, a nordic race from the cold, harsh climate and terrain of Scandinavia, and the Polynesians, an island people set in the middle of the vast Pacific Ocean.

The Vikings, in particular, provided a remarkable example of the effective exercise of maritime power. Denied access to easy markets because of their remote geographical position, they had to sail far from their homes in order to survive and develop economically. While it is well-known that they frequently engaged in terror tactics and plundered the coastal villages of Britain and the Low Lands, it is less well-known that they also established an extraordinary pattern of sea and water trade routes reaching right across Europe to the Danube. One reason for their achievements was technical. The Vikings had developed a ship that was capable of sailing much closer to the wind than traditional coastal vessels. It was, therefore, able to outmaneuver opposition and sail into the wind. Furthermore, its shallow draft permitted it to sail up shallow rivers and estuaries which were often off limits to heavier ships. Finally, the Vikings established an excellent system of navigation. Although they rarely sailed beyond the sight of landfall, they were able to cross the Atlantic with great accuracy and make repeat journeys.

An important change in the pattern of European commerce came with the Mongol conquest of Asia in the 12th century. One effect was to reestablish trade links between China and Europe and by the end of the 13th century two routes were in use: the first went from the Crimea, through central Asia and Mongolia on to Peking; the other route went from the Black Sea through Persia, Afghanistan and Sinkiang. In addition to the land communications (which paralleled the old Silk Road), the conquests also opened up the sea route which became known as the spice route. The route went by land from the Black Sea through Persia to Hormuz at the mouth of the Persian Gulf (sailing ships could not regularly make the journey to the north of the Gulf because of the prevailing northerly winds) and on to India and the Far East. The roads were kept in good repair and were safe for the first time since the 600s when the conquests of Islam had severed communication between China and Europe.

This access lasted until 1370 when the Chinese attacked the Mongols and so heralded the decline of the Mongol Empire. The Chinese severed trade and contact with the Europeans and the West and so terminated the land logistics systems across Asia.

In parallel to the Chinese successes in the Far East, the rise of the Ottomans led to endless battles with the outposts of Christendom, culminating in the fall of Constantinople in 1453. This meant that not only was trade with China severely curtailed, but that Arab and Ottoman

middlemen now controlled both the land and sea routes to India and the Spice Islands via the Middle East. The only Europeans to benefit from this set of circumstances were the Venetians and the Genovese.

In the late Middle Ages, the spices came from India, Ceylon, and Indonesia, and were distributed throughout Europe by the Venetians. The spice routes were complicated: in the Far East, Chinese sailors carried nutmegs and cloves in junks from the Spice Islands to Malacca; the spices proceeded by sea from Malacca to India, this time carried in either Arab, Malaysian, or Indian boats. The Indian coast of Malabar contained the spice ports which sold the Far Eastern products, together with cinnamon from Ceylon and pepper from India. From this point on, the Arabs carried the spices to ports in Persia, Arabia and East Africa. At the end of the 15th century, there were two alternate routes to the Mediterranean using two ports, Hormuz and Aden.² The route up the Red Sea required that the spices be transferred from the large baghlas to smaller coastal vessels to their ultimate destination in Alexandria. From Hormuz bouars carried the spices up the Gulf into the Shatt al Arab, from whence they were transferred to caravans and sent overland either via Asia Minor to Constantinople or across Iraq via Baghdad to the Syrian port of Tripoli (the outlet from the great bazaar at Aleppo). At Alexandria and Tripoli, Venetian ships carried them to Venice and hence on by land and sea to farther destinations in Europe.

This, then, was the situation in the mid-15th century: Europe was relatively prosperous since there was sufficient surplus wealth to spend on luxury goods from the east; however, trade with the east was controlled by Arab and Turkish middlemen and only the city states of Venice and Genoa were able to profit from the situation. The attempts by the spice consumer countries to break the Arab and Venetian stranglehold on the spice trade was one of the motivating factors for the Age of Discovery and, while one should not overdraw the present day analogy with Middle East oil, the lessons are very pertinent.

The Age of Discovery

To explain the upsurge of discovery that occurred from about the mid-15th century for the next 100 years solely on the grounds of economic incentives would be as erroneous as explaining Napoleon's war against Russia by sole reference to the ambitions of Napoleon and the intransigence of Alexander. Yet, there can be no doubt that the ultimate goal of economic rewards were never far from the minds of those who supported and undertook the search for new routes and new lands. The economic incentives that made the Portuguese so keen to find an Atlantic sea route to Asia was Arab and Venetian and Genovese domination of the Mediterranean. Later, however, Spain and Britain both had incentives to find alternative routes to break Portuguese control of the Cape routes; for instance, Magellan's famous voyage was an attempt to find a south-west route to the Indies for Spain.

The British were particularly interested in discovering new routes to the Indies and the sources of the spice trade. Being the most northern European country of consequence, the prices of spices were highest. Attempts had been made to bypass the European middlemen by sending ships to the end of the caravan route. (For instance, in the mid-1400s Robert Storing of Bristol lost two ships dispatched to the Middle East; one was wrecked off the coast of Greece and the other was attacked by the Genovese who naturally did not want British merchants circumventing their profitable role as middlemen.³

One enterprising gentleman who saw that British merchants could make a fortune if they could find a short, northern route to the Indies was John Cabot. Although he was of Italian origin and had become a naturalized citizen of Venice, there is some evidence he sought support from the Portuguese and Spanish to pioneer a short route to the Indies, but it was in England that he was to receive the greatest backing as, in 1496, he was granted permission by Henry VII to sail across the Atlantic to try to find the new route.⁴

However, the first country to fully exploit the new routes to the east was Portugal. Nevertheless, in spite of their pioneering efforts at establishing the Cape route and opening up the coast of Africa, the Portuguese dominance of the spice trade was short-lived. Although they had no problem securing spices, their parallel efforts to deny the trade to the Arabs led to endless skirmishes and taxed their

limited resources. They were never able to conquer Aden, which would have given them control of the Red Sea route. Furthermore, rumors abounded in Europe that spices carried by Portuguese ships were of inferior quality to those obtained from the Arabs by the Venetians. In part, this rumor may have been spread by the Venetians themselves but there was also evidence that Portuguese ships suffered greatly during the rough passage from India and it was therefore probably true that some consignments of spices were soaked and sodden with salt water wwhich would, indeed, have affected their aroma. Another problem was that the Portuguese had little to offer the traders except bullion, while the Arabs carried many products that were considered desirable by the Indians and the Chinese.

It was the Dutch rather than the Portuguese who eventually succeeded in cutting out the Arab traders from the spice markets. They did this by establishing a permanent presence in the Indian Ocean and by shrewd dealings with the local powers. However, the most effective long-term control over the sea routes and trade to the Indies was eventually established by the British who not only established a workable political relationship with the local rulers, but were more successful at managing the finances of international trade than were their Dutch competitors.

This cursory review of the Age of Discovery has so far been presented almost entirely in terms of economic and military factors. Yet, to fully appreciate the constellation of

events that led to the great voyages of that era it is necessary to appreciate the impact of ideology, the spirit of adventure, and the role of leadership that motivated the captains and visionaries of the time. While greed should never be discounted as a factor, there had to be additional incentives that inspired the dramas of those years. And this, of course, is the lesson for today: the United States will never reestablish its maritime superiority unless a similar combination of factors is at work. The economic arguments may provide the political justification for greater exploitation of the seas and the Soviet threat may provide the military justifications, but unless and until the United States and the Western allies regain a sense of confidence and ideology regarding their national policies, the contemporary crisis of inertia will probably continue.

The second lesson that has great relevance for today relates to the economic alternatives that can be adopted in times of constraint. With respect to spices, the Europeans faced two dilemmas: their demand, and the supply price. While resenting the markup on spices, they nevertheless went ahead and paid the price because the demand was present. Yet, it was price that provided the incentives to circumvent the Arabs and Venetian middlemen.

The similarities between the 15th century spice trade and the contemporary oil trade can be overdrawn but there are some common factors that we would do well to understand. Is oil more essential to 20th century industrial society than spices were to 15th century society? If price is

the criteria, then the answer may be no, since price mark-ups in the spice trade were equally dramatic as present-day oil markups. But, is not oil essential for production? Well yes, but only in the short run and certainly the United States could make do on non-Arab oil if it really had to. The point is that the price of oil is still not high enough to persuade governments to go for emergency crash programs to ration and fund subsidies, though we may be approaching that point. So long as the supply is forthcoming, the price is still a secondary factor. However, if interruptions in supply were to accelerate - assume, for instance, another Arab oil embargo, or a counter revolution in Iran, or a Nigerian embargo - then not only would the price rise to meet the reduced supply, but there would almost certainly be greater incentives to avoid a similar situation in the future; that is to say, the incentives to seek for alternatives would now be present. At this point, what would be required, if the 15th century is anything to go by, would be leadership, resolve, and a willingness to take risks and, if necessary, use force to prevent others from exploiting our weaknesses.⁵

Mahan's Concepts of Maritime Power

In view of the importance attached to the legacy of Alfred Mahan and the fact that his ideas are given great credence today (i.e., the term Neo-Mahanism is appearing more frequently in maritime literature) it is as well to briefly review (a) what he said about the elements of

maritime power, (b) what was missing from his writings, and (c) what his legacy really is. This will be done by discussing his elements of seapower with respect to the United States and the Soviet Union. The weakness of his thesis will be demonstrated by showing how the decline of Britain's maritime power had a great deal to do with technical change and logistics, two elements he tends to downplay. Finally, his legacy will be reviewed in the context of present U.S. defense policy.

--Mahan's Elements of Seapower

In his basic work, The Influence of Seapower Upon History, Mahan lists six basic elements determining the seapower of nations: geographical position; physical conformation, including climate and natural production; extent of territory; number of population; character of people; character of government and national institutions.

Many of the examples he draws upon to justify this list make good sense even today. Before discussing what is missing from the list, let us consider the classical elements and relate them to the contemporary environment.

--Geographical Position, Physical Conformation, and
Extent of Territory

Mahan's first three elements of seapower have considerable overlaps and, therefore, can best be treated as one single category in view of the "geographic" component of each element. Despite the advent of the intercontinental missile, geographical position remains a critical factor in determining the relative strength and vulnerability of

states. For all conceivable military conflict short of general nuclear war, geography played a role in influencing strategic posture. Furthermore, even in the event of general nuclear war, geography would not necessarily be irrelevant depending upon the nature of the nuclear exchange and the relative balance of power between the adversaries after initial nuclear exchange. The concept of "broken-backed" warfare coined by Churchill in the early 1950s, referred to an ongoing war fought by conventional means following crippling nuclear attacks which, metaphorically, broke the backs of the competing states. In this situation, geographical access and control of the sea would play a vital role in determining the relative survival capabilities of the major adversaries.

In all other likely military scenarios, the role of geography will also continue to be a key element of the military balance. In more specific terms, any comparison of U.S.-Soviet maritime power must pay special attention to the major geographic asymmetries which influence each country. The United States is geographically vulnerable in several different ways. First, its outer territories, Alaska and the Aleutians and the Hawaiian archipelago, are located in remote areas far from the continental United States, and, in the case of Alaska and the Aleutians, in close proximity to the Soviet Union. Secondly, many of the United States' most important allies and trading partners are located far across the oceans and, therefore, necessitating the need for a "forward deployment strategy."

which has economic, military, and political liabilities. Third, the United States, being a maritime power, has most of its population located within 200 miles of the seaboard which has serious implications for vulnerability in the event of an attack by Soviet submarines against the U.S. urban and industrial complex.

To offset these vulnerabilities, however, the United States is blessed with several important geographical advantages. First, because it is a continental power separated from Europe, Asia, and Africa by two oceans, it is relatively immune from landward threats and will remain so for the foreseeable future. While there have been periods in U.S. history when foreign powers, in cooperation with Mexico or Canada, have posed threats, these seem unlikely for the next decade unless one can anticipate serious crises developing in relations with Mexico and Canada. Secondly, and strongly related to Mahan's second element - physical conformation - the United States is blessed with excellent harbors spread along its three continental coasts, which gives it open access to the high seas and, with the exception of the Caribbean ports, are located far from any possible enemy positions. Third, the United States has a large continental territory and has access to several important distant strategic islands, including, of course, the State of Hawaii.

In comparison to this list of U.S. vulnerabilities and strengths, the Soviet Union faces a rather different set of geographical problems. Being a vast, underdeveloped

continental land power with very extreme climates that have had a profound influence on its history and upon the psychological attitudes of Russians towards the development of the interior and the search for maritime access, the size and climate of the territory have offset the disadvantages of having adjacent borders with Europe, the Middle East and the Far East. Neither Napoleon nor Hitler were able to defeat General Winter, and the location of the Soviet population today is still much farther inland and removed from the direct threat posed by American forces than is the case of the United States. However, the very size and climate of the Soviet Union also pose serious military disadvantages. Vital land lines of communication between the European Russia - the industrial heartland - and the Far East remain extremely vulnerable, and, although the construction of the new BAM railroad will help alleviate the dependency on the Transsiberian Railroad, the Soviet Union is, by U.S. standards, still backward in terms of transportation and still relies rather heavily on the waterborne transportation system for much of its commercial activity.

The Soviet Union's most serious vulnerability in this category relates to its restraints on access to the high seas. Although the Soviet Union has less need of such access than the maritime powers, it is well to recall the saga of the imperial Russian fleet as it sailed from the Baltic to the Straits of Tshima in 1904 to be beaten by Admiral Tojo and the Japanese navy. They should also recall the historical

interest shown by Russian leaders from the time of Catherine the Great to secure access to the warm-water ports of the Indian Ocean and the Mediterranean. Furthermore, since those days Soviet economic interests in the seas have increased, especially in the fields of fishing and offshore mining.

In military terms, the Soviet access problem can be broken down by naval district. Each of the four Soviet fleets, the Northern, the Baltic, the Black Sea, and the Pacific, face dangers as a result of the unique geographical configuration of the Soviet Union. The Baltic and Black Sea fleets are literally hemmed in by the Danish and Turkish Straits, while the Northern and Pacific fleets face the prospect of egress to the high seas through sea areas in close proximity to American and allied naval and air forces, and also have traverse narrow waterways, especially in winter in case of the Northern fleet. Although the Soviet Union has greatly improved its capabilities to fight a way in the regions containing the approaches to the four districts, the fact remains that its capacity to project power beyond the immediate area of its geographical land mass in time could be seriously curtailed, especially if the Western naval powers were willing to start offensive action against some of the more obvious targets, such as the Kola bases. In fact, Soviet vulnerability in the Kola is one of the most striking examples of this type of geographical asymmetry between the two superpowers. Kola has become the most important maritime base for the Soviet Union because it

is from this area that it deploys the bulk of its SSBN force and from here that large numbers of the Soviet fishing activities in the north Atlantic take place. Kola is adjacent to NATO territory in north Norway, and its inland harbors are, in theory, especially vulnerable to Allied mining operations. It is from Kola, too, that the Soviet naval aviation (SNA) can deploy into the north Atlantic and pose threats to the Allied sea lines of communication which are so necessary to maintain the viability of the NATO Alliance in the event of a major war with the Warsaw Pact countries.

In terms of physical conformation and extent of territory, the United States and Soviet Union have advantages over most other powers in the world. Both are well-endowed with natural resources to the extent that both countries could probably survive on their own resources if they had to. Despite the growing U.S. dependency on foreign resources, especially oil, it should be remembered that this extra demand reflects demand for peacetime free market conditions. In the event of crises, the United States has enough oil to keep its industry and military forces operational and probably enough surplus to provide to oilless allies. Similarly, the Soviet Union has an abundance of resources and will be able to feed its population at a level of nutrition necessary for survival despite endless horror stories about the plight of Soviet agriculture.

-- Number of Population, Character of People, and Character of Government

The second category of elements which Mahan discusses

could be termed the human, as distinct from geographical and physical elements. In many ways, his observations about the human factor in maritime power seem more simplistic today than his geographical observations.

Since Mahan's day, the level of analysis of human factors as a component of international power relations has become much more sophisticated and empirical. Mahan paid particular attention in his discussions of population to the number of people who were trained in maritime skills - a "large seafaring" population. While this factor is still important, it should be stressed that modern technology has obviated much of the need for seafaring traditions. Some of the most important "sailors" on a modern ship are the computers, and while no one should for a moment downgrade the importance of skilled maritime traditions, it is a fact that many of the most sophisticated activities that take place on board a modern ship in nearly all circumstances short of war require different skills to those referred to by Mahan. Furthermore, many modern skills can be learned by non-seafaring persons, although from the point of view of morale, a preference for the nautical life probably does no harm.

Undoubtedly maritime skills remain an important element of any country's power that wishes to exploit its maritime environment, but the key question is whether these skills can, today, be thought of as unique, i.e., non-transferable to or from other skills of the nation, or whether or not

there is a greater degree of substitutability than there was in the past. Put more bluntly, life on board a modern oil tanker, container ship, or even large warship, bears very little resemblance to operations in similar classes of vessels in World War II, let alone at the turn of the century. Modern ships can operate in virtually any sea conditions. Major repairs of equipment are usually undertaken on board, and navigation, while occasionally a problem, has nothing like the uncertainty that bedeviled the most routine voyages in Mahan's day.

All this is not to say that seamanship has no place in modern merchant marine or navy, but rather that fewer members of the crew need to be skilled in the arts, as distinct from the sciences, of their new profession. What this means is that, in theory, a country with very little maritime tradition could be capable of operating a modern maritime force over a much shorter time frame than was the norm in the past. This is not the same as being able to operate effectively a navy in combat conditions, but it does mean that routine commercial operations at sea can now be practiced by increasing numbers of countries if they so wish to.

-- Mahan's Missing Elements; The Dynamics of Technology and Logistics

o Britain's Maritime Power and the Role of Steam and Coal

Because Mahan describes in great detail in his books the importance that Britain's navy had upon the ability of the British empire to prosper and expand, it is relevant to examine this in light of what happened to Britain at the

beginning of the 20th century.

Perhaps because he himself was living and writing at the highest peak in Britain's worldwide supremacy and he himself, as an American, was seeking ways to ensure that the United States learned the right lessons from the British experience, it is not surprising that his writings pay little attention to technology and logistics and the very important role these elements had come to play in enabling Britain to remain the world's maritime superpower.

To understand the role of technology and logistics upon maritime power at the end of the 19th century, it is necessary to go back to the 1860s when the invention of the steam engine heralded the beginning of a revolution in land transportation with the development of the railway. The railway was such an obvious improvement over the coach and horses that it soon was widely accepted as the inevitable wave of the future. However, there were greater problems with the application of the steam engine for maritime use. The first steam engines were used to supplement sailpower and were installed to drive large, unwieldy paddles. While paddle steamers made sense for certain waterways such as the major rivers of the central United States, they were not reliable for heavy sea-state conditions and could not, therefore, replace sail. Furthermore, steam engines burned coal or wood and both were unavailable on the high seas unless the ship was accompanied by a support vessel. However, along river and railroads, steam engines could be easily refueled

by stockpiling coal and wood at fixed intervals along the route, rather like a railroad.

The first breakthrough in maritime steam engine technology came with the invention of the screw propeller, which made steam-engined vessels more stable and capable of higher, more sustained speeds. Gradually, the screw propeller replaced the sail as the predominant form of propulsion aboard contemporary warships though until the late 1880s sail was still used on most classes of vessels. With the gradual acceptance of the steam engine, the dependency upon coal increased. Furthermore, it was not possible to use ordinary coal for most maritime operations, especially if military maneuvers were involved and the ships would be operating in tropical climates. The preferred coal was one that was relatively smokeless and easy to handle in hot climates, i.e., it would not disintegrate. A near monopoly on this type of coal was held by Britain.

Throughout the latter half of the 19th century Britain was the King of Coal: in fact, Britain and its empire was not only the world's largest coal producer, but also the largest exporter; in contemporary terms, Britain was both the United States and Saudi Arabia of coal. Coal not only came from Britain proper, but from India, South Africa, and Canada. Thus the Royal Navy was able to set up an elaborate network of coaling stations throughout the globe especially along the main trade routes of the empire and keep them supplied with British-controlled coal. No other country

was capable of establishing such a worldwide network and no other country tried; Japan had control of a few coaling stations in the Far East, and the United States had coaling stations in the Caribbean and Pacific. The other great European powers, but especially Germany and Russia, were very dependent upon access to foreign coal if they wished to deploy their fleets far from their own lands.

There could be no better example of this dependency than the problems faced by the Russian Grand Fleet in 1904 when it made its fateful voyage to the Far East from the Baltics via the Cape to join other Russian forces in the war against Japan. By the time the fleet of 45 ships arrived at Tsushima Strait, the demonstrations of wear and tear on the ships had been disastrous. Although Admiral Togo deserves great credit for the brilliance of his campaign against the Grand Fleet, the lack of preparedness of the Russians undoubtedly played an important role in the overwhelming Japanese victory. One reason for this was that Britain had made it very difficult for the Russians to obtain coal enroute. In fact, due to its alliance with Japan, British coal had been denied to the Russian fleet, although coal was sold to German civilian ships who subsequently rendezvoused with the Russians and topped them up. The point here is that the logistics of operating a large coal burning fleet were horrendous. Coal is a bulky, messy product, and could be only be moved about in the ship by shovel; thus, very large numbers of crew were permanently

involved in coaling operations on board ship, which was a very inefficient use of manpower.

It was, in part, due to its great self-sufficiency in maritime operations that Britain was able to fight the very unpopular Boer war between 1898-1903 without really having to worry about direct foreign intervention. This is not to say that there were no fears during this war that Britain's enemies would attack the Empire, but that in the specific theater of South Africa British power was unchallenged primarily due to its maritime superiority and control of the logistics of supply. To this extent there is a similarity with the U.S. role in the Vietnam war. While the U.S. intervention was extremely unpopular, no foreign power, not even the Soviet Union, was capable of preventing the U.S. intervention by counter-intervention or interposition. How far Britain's Boer war, which heralded the end of Britain's world supremacy, parallels the U.S. decline after Vietnam is an interesting question. There are certainly analogies and perhaps the most ominous is that by the time Britain next had to fight a major war it had lost its maritime self-sufficiency, the reason being that for technical and military reasons Churchill and the Admiralty decided in 1911 to change the engines in Royal Navy ships from coal to oil burners. The strategic implications of this move were far reaching indeed and were not anticipated by Mahan.

o The Shift From Coal To Oil

The military arguments for and against the shift to oil propulsion could be neatly separated into the tactical

and logistical. From about every operational perspective, oil was a godsend over coal; it was much easier to handle and required fewer crewmembers to operate, hence there were great savings in manpower on board ship; it could be stored in different and more obscure parts of the ship thereby leaving more room for ammunition; underway and port replenishment was much simpler and much less time-consuming; most important, oil-fired engines gave a much better performance at speed than coal engines. A difference of five knots at full steam could make all the difference and it was the anticipated higher speeds of the new German Dreadnought that convinced the Admiralty that, weight for weight, the change to oil would bring great tactical benefit. Other benefits of oil included the fact that oil-fueled engines could operate on crude oil purchased from virtually any storage facility in the world.

To offset these advantages, however, was the grave realization that Britain had no oil of its own, nor ready access to oil. At that point in time, the world's leading oil producers were, respectively, the United States, Russia, and Mexico. It was not in Britain's interests to rely on these supplies for the strategic defense of the empire. Yet, as the arms race with Germany accelerated, the tactical advantages of oil seemed overwhelming.

So it was Churchill who took the momentous decision to unilaterally move towards the abandonment of the benefits of coal autarky. To compensate, however, the Foreign Office

was instructed to press for special claims upon the newly discovered oil resources of Persia and Mesopotamia (Iraq). Although Britain had always had major strategic stakes in the Gulf region, due to the proximity of its arch rival, Russia, to the frontier of the empire in India, oil now became a second issue in increasing British interests in the region. In fact, by the outbreak of war in 1914, both Britain and Russia were very concerned about their respective oil supplies from the Gulf and Baku in view of the threat to these areas posed by the Turkish Army which was within striking distance of both areas.

World War I demonstrated beyond all imagination the importance of secure oil lines of communication. The British campaign in the Middle East, which culminated with Allenby's entry into Jerusalem in 1917 was, in part, motivated by the need to protect the route to India and the new Gulf oil. However, it was Britain's and France's dependency upon the United States for oil that proved to be one of the most important logistics crises of the war. At one point, Britain was on the verge of ending hostilities because of the effectiveness of the German U-boat campaign against the oil SLOCs across the Atlantic, and it was only the belated use of the convoy system that overcame the U-boat threat.

The purpose of this footnote on history is to show how strategic dependencies can change very quickly as a result of technical change and the geographic location of resources. From being the Saudi Arabia of coal in 1900, Britain rapidly moved to the position of an oil-dependent nation, which, in

turn, led to a changed British perspective on areas such as the Persian Gulf. Furthermore, this shift in Britain's power was taken deliberately for short-term tactical reasons and was not the result of incompetence or bad luck.

Insofar as maritime policy is concerned, the point is that so long as a country has superiority in terms of its fighting ships and the worldwide logistical infrastructure necessary to support them in battle, the benefit of being a strong maritime power can be great. However, if logistics autarky is not possible, or alternately, is eroded for one reason or another, then the ability to project maritime power to remote areas in times of crisis and war may be impossible, and these constraints rather than inadequacies in weapons systems or ship performance may be the most significant limiting factors. Today, for instance, both the United States and the Soviet Union face major constraints in their respective abilities to operating their blue-water navies when and whence they like. For, although both countries possess "global" navies, both, but especially the USSR, have an inadequate worldwide infrastructure to support much more than presence missions or one-shot encounters in any future war. In this regard, the United States is still much better endowed to conduct contained, high-tempo operations in areas such as the South China Sea and even the Indian Ocean. The fact remains that so long as the Soviet Union has no major base along the Indian Ocean littoral, it cannot contemplate large-scale military operations with its navy in Africa and the Middle East. If, however, the Soviet Union were to gain

such access, this, alone, would have a major impact upon the naval balance of power in the region. In this regard, it should be stressed that any Soviet military presence in Iran would give it access to the warm water port of Bandar Abbas, which would have direct land communication with the Soviet Union proper. Thus, in this case, a shift in the land balance could have a decisive effect upon the maritime balance, drawing attention once more to the importance of the linkage between these two elements of the power equation between nations.

Mahan's Legacy and Current U.S. Policy

The most important legacy of Alfred Mahan is not to be found in his technical writings nor even in his classic work, "The Influence of Seapower Upon History." Rather, his great relevance today relates to his political vision, his sense of destiny, and his efforts to persuade his own government that its future greatness lay in the further exploration of its maritime assets.

His message for today would be that unless the United States has a greater sense of purpose and seeks practical ways to fulfill it, it will surely decline as a world power. What does this translate into? First, that the United States has abundant maritime assets that it can and should exploit, ranging from further development and control of its own immensely rich offshore maritime resources to greater investments in maritime technology for both military and non-military purposes. Second, in a sense, most applicable to

Mahan's basic message, the United States must make a much greater effort to extend and exploit its lead in air and space technology for it is in this medium, but especially outer space, that important determinants of international power will be decided in the 21st century. In fact, it would be appropriate to modify the catch-words of earlier geopolitical strategists, such as Makinder and Douhet, and propose the dictum that in the future the country that controls outer space will control the atmosphere and the maritime environment and the country that controls these mediums will control the world. The third message derives from the second; namely, that the United States must rediscover the natural will that is so necessary if great achievements are to be made that will eventually have enormous benefits from most American citizens.

It should be noted that such an approach is nationalistic not international and, while this does not imply an abandonment of the codes of international behavior which have become part of our daily lives, it does imply an open and clear-cut rejection of the ideology of internationalism which presumes that the planet earth is ready for enlightened cooperation and, in the case of the rich countries, of sacrifice. The reality is that nationalism, not internationalism, is in the ascendancy everywhere, but especially in the so-called less industrial world. Whatever other miracles may occur in the next 50 years, the eradication of this fundamental tradition is unlikely to be one of them

unless another world war and its devastating consequences precipitates another bout of postwar euphoria about harmony and bondage between nations in the cause of common survival. This is not to be meant as a cynical observation but, rather, a reflection of the facts as they appear to any objective observer.

A fourth implication of this thesis is that the manipulation of military power will remain the cornerstone of what semblance of world order exists in the decades to come and, therefore, the country with the most effective military power will continue to have a disproportionate say in the control of international relations.

STRATEGIC IMPLICATIONS OF THE EMERGING MARITIME ENVIRONMENT

If we think of the maritime environment in geographical terms, it is possible to detect several important new overlays on the map of maritime affairs. These overlays, together with new political realities that are in effect in many regions of the world, combine to make up what can only be described as a dramatic new maritime tapestry.

The new map of this tapestry is made up of political, legal, economic, technological, and military elements. In spatial terms, it means that the map has to reflect the changing patterns of maritime boundaries and the changing access to these boundaries that the combination of technology and politics has determined. For, in very simple terms, what is happening is that on the one hand traditional maritime access, which the great powers have taken for granted for hundreds of years and which has conditioned the postwar evolution of power, is becoming more constrained as legal sea boundaries are extended and more heavily policed and more and more independent countries are asserting their rights to restrict access in their newly expanded territorial waters and exclusive economic zones. Thus, if we confine our geographical analysis to the traditional globe, we find that, despite Concorde and Boeing 747, and instant worldwide command, control, and communications, there are increasing parts of the world where the United States finds it more difficult to deploy military power today than at any time since the end of World War II.

However, to offset the growing constraints on access by sea and air is the specter of new technologies and, above all else, the exploration of outer space, which, in many ways, is compensating for the political restrictions on earth. For example, whereas in the past it was important for ships to use land-based communications when sailing in remote areas such as the Cape of Good Hope, today and increasingly in the future, satellite communications will give ships real time navigation much superior to anything available in the past. For example, the U.S. Navy no longer needs to use South African facilities when rounding the Cape because of its own space-based communications systems.

To try to make some sense out of all of these conflicting elements, it is first necessary to look at each trend in a little more detail. The new legal regime will be first examined, followed by a discussion of the economic, technical, and political factors that have helped to shape this regime.

The New Legal Regime

While it is not the purpose here to review the entire history of the Law of the Seas, a few reminders are in order. Until the 1960s, the majority of countries of the world subscribed to the accepted Grotian principles of the three-mile limit for national sovereignty over adjacent waters. However, as a result of the 1958 Continental Shelf Agreement which decreed that states had the sole right to exploit the resources of their continental shelves out to

200 meter point or median line, it became increasingly clear that as more and more valuable resources were economically retrievable from the seabed, it would be necessary to further refine the law of access to these resources. In addition, the worldwide growth of fishing was beginning to pose problems of jurisdiction and conservation. During the 1950s, the protein-hungry nations of East Europe, the Soviet Union, Japan, and the Koreas expanded their fishing industries and some, especially the Russians and the Japanese, began to fish in distant waters using new, highly efficient techniques, including factory ships and sonar and radar, for detecting fish shoals. In other areas, isolated conflicts began to emerge between other maritime nations, including those bordering on the South China Seas, and in the Atlantic there began what became known as the Cod War between Britain and Iceland.

Thus, economic pressures combined with new technologies were making the sea more competitive than ever at the same time that the process of decolonization was taking place and the countries of the "Third World" began to flex their egos and challenge the traditional concepts of international law, including the Law of the Sea which, they argued, had been set up for the convenience of the traditional maritime powers and were yet a further legacy of colonial exploitation.

The most important issues at stake in the new Law of the Sea relate to the extent of sovereignty, the economic rights of littoral states over the continental shelf beyond

the territorial sea (the EEZ), and the ownership and rights regarding minerals and other products found in the high seas, i.e., the remaining areas of the oceans not covered by the two former sets of claims. After endless sets of discussions at the four Law of the Sea Conferences to date, some consensus on these issues seems to be emerging, including principles that will extend territorial seas out to 12 miles, establish exclusive economic zones out to 200 miles (inclusive of the territorial sea), or to median lines, and establish an international regime to manage the exploitation of the high seas. In strategic terms, the first two issues give rise to questions of most importance to the maritime powers, especially the extension of territorial seas from 3 to 12 miles, which will affect over 100 straits, including strategic passageways such as Gibraltar, Malacca, Hormuz, Bab el Mandeb, and Dover, will fall under the jurisdiction of the littoral states. Although the negotiators at the Law of the Sea Conference have gone to great lengths to insure that traditional access through straits will be maintained, some believe that the new laws, together with the natural increase in maritime traffic, will inevitably lead to greater restrictions on access. For starters, the traffic problem in some of the most crowded straits, i.e., Malacca and Dover, have already given rise to strict "rules of the road," which, if not enforced, could lead to serious accidents. The ecological effects of tanker mishaps have confirmed fears over safety at sea and if we add the potential for nuclear-powered ships

colliding with supertankers or running aground in narrow shallows, it does not take much imagination to see how, in times of poor political relations between countries, littoral states may enforce strict access rules thorough waterways that are nominally justified on the grounds of safety and pollution. In fact, some have gone so far as to say that if the present levels of traffic at sea continue to increase, it will only be a matter of time before an equivalent of air-traffic control zones will have to be set up to monitor and regulate movement.

This will be a long way from the days when the great navies could sail with immunity from sea to sea and ocean to ocean without asking anybody's permission. The point is not that in a crisis situation the great powers will be prevented from using strategic straits-- although this could happen --but that the political costs or diplomatic price to be paid for defying the littoral state and using the strait will undoubtedly be higher. Furthermore, if it is assumed that overflight rights could be equally affected by the extension of jurisdiction out to 12 miles, this might have an equally significant impact upon great power crisis diplomacy. Since one of the great attributes of air power is speed, any factor that works to delay flight time, such as rerouting or the need to ask permission to overfly, would naturally downgrade the value of this capability.

The establishment of EEZs may have a similar strategic impact upon the major maritime powers. Although

the littoral states will have no legal jurisdiction over movement through the EEZs, there may come a time when, dependent upon the level of activity and size of the EEZ, greater monitoring will be necessary. In many respects the North Sea seems the most likely candidate for such "creeping jurisdiction" given the plethora of activities taking place in its waters, the appalling weather conditions, and the fear of pollution and accidents. The mere fact of extending out to median lines can, as of itself, create new perceptions of territory or, more properly, "territoriality", which, in turn, can influence decisions about de facto jurisdiction.

Economic Expansion in Remote Regions

The second change in the maritime environment, namely, the rapid expansion of maritime resource exploitation, is clearly related to the new regime. The increased use of the seas as a source of minerals, energy, and animal protein is itself a result of two phenomena: increasing demand for these products, especially from the industrial countries, and improved technology that has opened up hitherto impenetrable areas. Perhaps the most dramatic examples have been in the development of major offshore oil and gas facilities in areas such as the Arctic Sea and the North Sea and in the increased use of extremely efficient techniques for fish harvesting, including factory ships equipped with long-term refrigeration capabilities. In some respects, this new maritime technology is in its infancy.

For instance, the Prudhoe Bay oil fields have required the use of special techniques for cold weather drilling and operations which have great implications for further oil development throughout the Arctic basin, including the Soviet arctic. Also, the Prudhoe Bay complex required the construction of the world's longest, most expensive oil pipeline from the north slope to the terminal facilities at Valdez in southern Alaska. Given the vast amount of oil that in all probability remains untapped in the Arctic region, and the experience gained at Prudhoe Bay, it can be expected that by the turn of the century some of the Canadian and Soviet fields will become operational, which, in their own way, will contribute to the expansion of the overall logistical infrastructure of the Arctic.

Similarly, the experiences with the North Sea oil development are likely to be applied to further oil developments in the Norwegian Sea north of the 62nd parallel and in the Atlantic Ocean to the West of the Shetland Islands. The overall impact of these northern oil developments will be to heighten the pace of economic activity in the region and generally increase the political sensitivity of these former remote maritime regions.

This, in turn, will inevitably lead to greater efforts by the littoral states to monitor and policy the off- and on-shore activities which, on the one hand, can lead to greater cooperation between adjacent states but, on the other hand, has within it the ingredients for enhanced conflict, especially if other issues such as fishing rights

and military security are taken into account. Thus, while one can postulate increased Norwegian-Soviet cooperation in the distribution of Arctic oil, one can also see how the same countries run the risks of antagonizing each other in view of the strategic importance of the Kola peninsula to the Soviet Union and the North Cape of Norway to the NATO powers.

As the remote arenas achieve greater economic and strategic importance, so they will lead to changed political perceptions on the part of littoral states as to their own sense of "territoriality" which, together with the new legal regimes mentioned in the previous section, may well have the effect of extending the concept of national sovereignty to cover the newly extended area. While this may not be codified - at least beyond the 12-mile limit - the de facto implication would seem to be a major increase in areas of direct littoral responsibility which will undoubtedly result in greater political and bureaucratic initiatives to establish laws and regulations for achieving secure operational status for the activities in the area.

Impact Upon Maritime Forces

The next set of overlays that must be entered onto the new strategic map relate to the changing nature of the maritime military balance and the impact this, too, will have on the geopolitical environment. As we enter the 1980s, two remonstrable trends are evident: first, the continuing expansion and overseas deployment of the Soviet navy; second,

the steady growth of smaller navies of many states in the less industrial world.

The emergence of the Soviet navy as an entity to be reckoned with on a global scale poses different sets of questions for different regions of the world. While the students of Soviet naval affairs and the U.S.-Soviet naval balance continue to debate whether the primary purpose of Soviet naval expansion is still basically defensive or whether it has assumed a more aggressive offensive posture, the fact remains that for most countries of the world Soviet naval strength has to be seen in potentially offensive terms. This is particularly true for the littoral states located near the four major egress points for the Soviet fleet: the Kola peninsula, the Baltic, the Black Sea and East Mediterranean, and the Soviet Far East. Thus, the buildup of the Soviet Northern fleet at Murmansk must be seen in terms of potential power projection by Norway, and to a lesser extent by the United Kingdom. Similarly, the expansion of the Soviet and Warsaw Pact naval forces in the Baltic has had an immediate impact upon the perceptions of Sweden, Norway, Denmark, and West Germany. The Black Sea fleet and the permanent establishment of a Soviet Mediterranean squadron represents a significant shift in the balance of power in the region and has important military significance for Turkey, Greece, Cyprus, Egypt, Israel, Lebanon, and Syria, and in the east, Japan, China, and the Koreas are directly affected by the Soviet naval buildup at Vladivostok.

In sum, no matter what Soviet plans are for the use of its maritime forces in the event of global war with the United States and its allies, in the context of peacetime and regional crises the new navy gives the Soviet leadership an added instrument of political-military power that can only help the overall capabilities of the Soviet Union to influence regional power politics in its favor.

This is not to say that the balance of naval power in the area has decisively shifted in favor of the Soviet Union, for such calculations or estimates can only be made if one assesses the entire spectrum of political and military tasks for which naval forces are used. It is probably still the case that in areas such as the eastern Mediterranean and the Far East, Western naval forces retain considerable advantages in any wartime scenario, or even in the event of serious regional crises and conflicts involving both sides.

However, the residual Western superiority has less relevance for peacetime presence missions, or in the context of bilateral Soviet-local power confrontations not directly involving the United States. Consider, for instance, the status of U.S.-Japanese maritime relations. Japan's bilateral relations with the Soviet Union involve several unresolved maritime problems, including the demarcation of fishing rights and the Soviet occupation of Sakhalin and the north of Hokkaido Island. There have been numerous incidents -- some of them violent -- between the two countries over the past decade over illegal fishing activity and recently there has been increasing harassment of Japanese fishing vessels by Soviet

ships and aircraft. This, in addition to the Soviet reinforcement sent to garrisons on the island of Sakhalin lends credence to the belief that the Soviet Union is using its formidable maritime power in the region to intimidate Japan and signal its determination to strengthen its political, economic, and military base in the region.

Impact Upon Japan

Concern over Soviet military activity in the Far East is the most compelling argument used by those who wish to see Japan increase its defense capabilities in the years ahead. Furthermore, in view of the nature of the Soviet threat, it is generally argued that the most useful investment for Japan to make in increased defense forces is in the maritime capabilities. The case for building up Japanese maritime forces is further enhanced if examined in the wider context of U.S.-Japanese defense requirements in the Indian Ocean and east Pacific. Since Japan has a vital stake in the security of its massive oil flow from the Persian Gulf, but is unable to project any military forces to that area or along the sealanes to the Indonesian Straits, it is totally dependent upon its diplomatic skills in averting a cut-off, or must place its future security in the hands of the United States, which is the only Western power capable of protecting the Gulf oil. This, of course, leads to a fundamental dilemma for both the United States and Japan. Since, in the short run, the only maritime forces the United States can divert to bolster its presence in the Indian

Ocean must come from either the Sixth or Seventh Fleets and, since the priority within the United States remains Eurocentric, any Indian Ocean task force is likely to be made up of predominantly Seventh Fleet ships, which, in turn, leaves a gap in the U.S. capabilities in East Asia. It is for this reason that important voices in the United States have called for increased Japanese participation in East Asian maritime security.

There is certainly no reason why Japan could not build up its maritime forces nor, for that matter, why, over time, the United States could not supplement its existing complement of ships with additional bottoms for deployment in the 1990s. And herein lies an important tradeoff for the Western allies. Additional ships will probably be most welcomed by the local East Asian powers, except the Soviet Union, but why should the United States foot the additional bill in order to keep Japan from developing a larger navy? In part, it can be argued that it is in the U.S. interest not to see too powerful a Japanese fleet emerge given the ripples that this would create in the region, and the possible independence it would give Japan in its overall foreign policy. On the other hand, Japan still contributes much less of its GNP to defense than all the other Western allies, including West Germany, and this fact, together with the intra-Western conflicts over Japanese trade surplus, add to the problem. This, in turn, must surely create in some Japanese minds fears that in the event of a showdown

with its trading partners in the United States and Europe it has virtually no power to protect its vital economic interests, which are so heavily dependent upon overseas resources. The bottom line from a worse-case Japanese perspective would have to be that eventually Japan must be able to play a more assertive role in its security to the point where a very large buildup of non-nuclear forces may become inevitable.

The Smaller Maritime Forces

The growth of small maritime forces over the coming decades can be expected to continue, especially in those regions where local conflicts over offshore resources will remain unresolved. Although this diffusion of maritime forces is part of the more general growth of military power in the less industrial countries, there are special reasons why it has occurred and will continue. Some of the reasons relate directly to the need to police newly acquired territorial seas and exclusive economic zones and to establish a maritime "constabulary" force for protecting resources, denying access to interlopers, and, in some areas, deterring increasing incidents of piracy and smuggling. Other reasons relate to more traditional concerns about political-military relations with neighbors with whom outstanding conflicts still exist. Thus, for the purposes of analysis, it is convenient to distinguish, at least initially, between the implications of growth of constabulary forces and more traditional military forces.

Constabulary Forces

In order to exercise surveillance over large sea areas, which is a prerequisite to any form of control, it is necessary for a littoral state to have at its disposal reconnaissance systems capable of operating in most weather conditions out to distances of 200 miles or more. Depending on geography and the prevailing climate, these tasks vary greatly in terms of difficulty. Most less industrial countries are simply not able to survey in any constant and systematic manner the vast areas of water over which they have or soon will have some technical jurisdiction. Furthermore, if a reconnaissance system is able to give positive identification to unknown vessels, civilian or military, it usually requires close visual contact. Thus, the identification of specific fishing vessels is often not possible with high-flying aircraft, let alone satellites (assuming that they are available) and the constabulary force must rely, instead, upon low-flying aircraft and/or sea-surface patrol craft.

In order to demonstrate the difficulty of positive offshore surveillance, the British example with the North Sea operations is illuminating and shows why less industrial countries will need to greatly improve their capabilities if they are to exercise even minimum control over their sea areas. In the British case the problem began in a big way with the de facto extension of British jurisdiction in the North Sea and Atlantic out to the median

line with adjacent countries or to 200 miles. Within this new British "territoriality" many economic and military activities take place, including normal seaborne and airborne traffic. (There are hundreds of helicopter flights a week out of Aberdeen to North Sea oil rigs.) Offshore oil drilling production and supply, multi-national fishing operations and, last but not least, a great deal of NATO and Warsaw Pact military activity. Thus, in any day, there are literally hundreds of ships and aircraft crisscrossing the British sector of the North Sea and North Atlantic. In addition, in the case of fishing vessels, there are very strict rules set by the British government regarding the number, type, and time-frame of foreign vessels that can fish and the fish they can catch.

The policing of the fish areas, therefore, requires that each vessel be identified and, if necessary, be capable of inspection. Herein lies the problem. If Britain simply banned all foreign fishing vessels, it would be a matter of identifying domestic from foreign vessels and taking immediate action against the interlopers. However, such an outright ban would be totally unacceptable in the context of Britain's broader economic and political relations with its neighbors. Thus, the practical tasks involved in identifying specific fishing vessels are formidable. The most usual method is to fly what are known as "tapestry" missions with Nimrod aircraft over a given sector of the North Sea. (The British sector of the North Sea is divided into three operational zones: one Nimrod can cover about half of one zone

in a 10-hour flight if the weather conditions are good.) In order to identify the vessel and also check on oil rigs, the Nimrod has to fly for about 10 hours with a full crew at an altitude of between 200 to 500 feet, at between 200 and 300 knots, and has to take photographs of the registration numbers on each fishing vessel. This is only possible if the identification marks on the fishing vessel are clear enough to be photographed and if the weather conditions permit good visibility. Once the vessel has been photographed, it may take several hours before a positive identification can be made (although this process can eventually be speeded up) and even longer before a surface vessel can intercept a suspected violator, by which time, of course, the vessel may have slipped back across a zone or into the high seas.

Admittedly, the North Sea is very busy and the British are trying to enact complicated laws, but it should also be borne in mind that over the past few years there have been several quite serious disputes over fishing with very friendly governments such as Holland and West Germany, which further points up the inherent scope for problems when economic pressures take place in a complicated legal environment. How much more likely then that in those regions of the less industrial world where nothing like the close relations of Britain and Holland exist that similar problems pose much greater difficulties and have within them the seeds for very serious antagonisms. The most likely arenas for this sort of competition are the South and East China Seas, which were

mentioned in a previous section in the context of Japanese maritime issues.

Another, and in some ways equally interesting, example, is what is happening in the southeast Pacific, and the relations between the new tiny island republics as they grapple with the delights, trials, and tribulations of independence. For thousands of years, island groups, such as Fiji, lived in harmony with their neighbors who were located thousands of miles away across hundreds of miles of open sea. Yet, with the establishment of extended sovereignty and economic zones, what has happened is that the effective boundaries of these groups of islands have become contiguous. Overnight, Fijians have found that their "distant" neighbors are, literally, their adjacent neighbors. With this has come concern about policing fishing zones, which are believed to contain extremely valuable resources. Thus, Fiji is developing a navy primarily to protect its exclusive economic zone, yet its ability to effectively police the claims under its jurisdiction is small, if not non-existent.

The technical requirements for successful constabulary forces are formidable and involve a combination of land-based systems, especially radar; land-based maritime reconnaissance, and, possibly, strike aircraft, and surface vessels capable of long endurance and equipment for search and intercept missions. It can be speculated that over the next twenty years or so the demand for these systems is bound to increase and with it will come the beginnings of a basic infrastructure

from which small constabulary forces can expand into small maritime military forces.

Small Naval Forces

The distinction between constabulary and naval forces is, as has been suggested, an arbitrary but useful one given the fact that the motives for procuring specific items for the forces may be different. However, irrespective of policing duties, increasing numbers of less industrial countries perceive a requirement for larger naval and maritime forces in view of military rivalry with neighbors. Most of these rivalries are of long standing (Arabs vs. Israel, India vs. Pakistan, North vs. South Korea, Argentina vs. Chile, etc.) and existed before the current spate of conflicts over offshore resources.

These naval rivalries reflect overall military problems between neighboring states and, therefore, have to be seen in broader security terms. The best evidence of this trend is to be found in the statistics of arms transfers to these countries for maritime missions. What the data shows is that the transfer of patrol boats, maritime patrol aircraft, ship-to-shore cruise missiles, and inshore submarines and smaller destroyer-type vessels is growing worldwide and is part of the overall trend of an increased military buildup in the less industrial world.

The quality and size of naval forces of the less industrial countries vary greatly from region to region. Some countries, like India, boast a relatively large naval

inventory which, in microcosm, reflects similar equipment and organization of the Western and Soviet navies, including an aircraft carrier with a complement of strike aircraft. Other navies, for instance, Israel, are smaller but emphasize missile and fast patrol boats and have the primary purpose of sea control in the event of war. The navies of South America have more traditional missions akin to the Indian while the navies of southern African countries, with the exception of Nigeria, are primarily designed for coastal patrol.

What does this add up to, first for the regions themselves, and second, for the overall strategic maritime environment and the central military rivalry between the United States and the Soviet Union?

Insofar as regional conflict is concerned, it can generally be argued that naval power will continue to remain the least important element in regional military balances. Exceptions would be where the source of the conflict between nations is essentially maritime, e.g., Argentina and Chile's very serious conflict over the disputed islands at the Atlantic mouth of the Beagle Channel, and the Philippines' dispute with its neighbors across the South China Seas over offshore claims. This is not to say that small navies would not play an important role in regional conflict. They can, but their role would be marginal. The Israeli navy cannot defeat Syria and vice versa. The same goes for the navies of India, Pakistan, and North and South Korea.

What about the broader implications of smaller navies for the rest of the world? This does raise some very interesting issues, especially if viewed in the wider context of a changing maritime environment. It has, for instance, been suggested that several less industrial countries are developing what can only be described as a sea-denial capability that under certain specific circumstances might pose military constraints upon the navies of the industrial countries. Here it should be noted that sea-denial capabilities can involve the use of land forces as well as maritime forces depending upon the particular sea area which is to be contested. Generally speaking, narrow straits can be controlled with a land force, while maritime forces are necessary for sea denial offshore:

A review of the spread of sea-denial systems to less industrial countries reveals that a sizeable number of these countries have in their inventories new now-or-planned conventional submarines, missile patrol boats, and maritime reconnaissance and strike aircraft. A lot of countries have minelaying capabilities, though minesweeping is not high on their list of priorities.

Thus, increasing numbers of less industrial countries have the capability to exercise sea-denial in increasing numbers of sea areas, but the important question is: what does this mean for the maritime powers of the West and the Soviet Union, all of whom have placed great reliance on traditional concepts of freedom

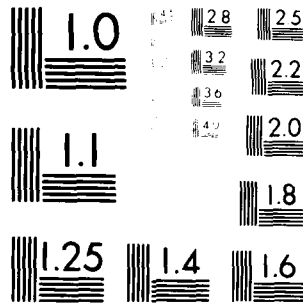
of the seas? Can the less industrial countries presently deny the maritime powers and the Soviet Union access through critical waterways? Will they be able to in the future? The answer to these questions depends a great deal upon the particular circumstances of an encounter. To be more specific, in a peacetime environment where none of the industrial powers is likely to be prepared to use force, the ability of littoral states to deny access is likely to be high. However, if such confrontations developed into a more serious crisis, there might come a point when the maritime powers would be prepared to contemplate the use of force to secure access. In this case, the outcome of the confrontation would become dependent upon the military calculations. Against some of the more powerful LICs, such as Argentina, Brazil, and India, industrial maritime powers with small navies, e.g., Germany and Japan, might find it very difficult to protect their interests with military power in the event of a violent confrontation. For the other major maritime forces (Britain, France, the United States, and the Soviet Union), each will still retain the capabilities to overcome these types of threats unless they occurred in very remote areas, such as the Straits of Magellan, in which case only the United States could probably engage in protracted high-tempo operations against local adversaries. The point is that, although naval forces have a great deal of autonomy to operate in remote areas, fuel and ammunition supplies become critical constraints after a few days of high-intensity missions. These can be supplied

by replenishment ships provided there is enough warning. Once this happens, there is little margin for error and very little redundancy in the system if a ship runs into serious difficulties. In other more accessible regions, the ability of the industrial maritime powers to overcome military threats is much greater. And here the point is that while the local military powers may be able to raise the costs of any military engagement, they will ultimately be beaten. However, the ability to raise costs is, of itself, an important political weapon which might deter the industrial maritime force from asserting its rights under certain circumstances. For example, in 1971 the United States sailed the nuclear carrier Enterprise from the South China Seas through the Straits of Malacca into the Bay of Bengal in order to lend support to Pakistan in that country's war with India. At the time, the U.S. decision aroused great resentment on the part of the littoral states, especially Singapore and Malaysia, who protested this operation. One has to wonder what might happen in the future if such an exercise were again attempted, this time with the implicit threat from the littoral state to deny access. Here again the point is not that the United States would not be able to get through in extremis, but that its political leadership might not consider the political costs worth the political benefits.

A Renaissance Of the Guerre de Course?

The trends discussed above have particular interest at the present time because of their assumed relationship to the Western world's growing dependency upon sea lines of communications to carry its products and raw materials from point to point. For instance, it has been suggested in many quarters, including some within the U.S. Navy, that the possible interdiction of commercial sea lanes is a threat the West must take seriously in the future, and this will require a greater investment in sea control ships to protect Western merchantment from a latter-day guerre de course. The idea that the guerre de course could assume importance in the context of Western defense planning deserves careful examination. For this reason, the concept itself will be mentioned in historical context followed by a discussion of the contemporary environment.

Guerre de course means commerce raiding. The assumption behind the concept is that to destroy an enemy's seaborne commerce is, in effect, to destroy his capability to wage protracted warfare if a high percentage of his economic welfare is based upon maritime trade. One of the most articulate advocates of the concept of guerre de course was Admiral Théophile Aube, who, in the late nineteenth century, founded the French jeune école of naval strategy. One purpose of Aube's strategies was to counter the prevailing emphasis throughout the Western world upon the value of capital ships as the primary instruments of maritime power. The leading capital ship advocates drew many of their



MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

ideas from the writings of A.T. Mahan, whose classic work "The Influence of Sea Power Upon History" had been published in 1890 and strongly advocated the capital ship. Aube and his associates argued that a minor maritime power such as France could not compete with the overall strength of Great Britain. It was hopeless and counterproductive to try to match Britain in capital ship production. Rather, it was argued, the weaker power should focus upon building up a fleet for commerce raiding against the merchantmen of the major maritime power and, therefore, hit at the heart of the adversary's economic system without the necessity for confronting the enemy's main naval forces head-on.

Furthermore, Aube and his colleagues believed that in the torpedo boat they had found the perfect giant killer. This weapons system, which was fast and lethal, would be able to be deployed out of France's Channel ports, interdict British commerce in the Channel, and retreat to the ports before the superior British fleet could be alerted. It was argued that such attacks would send shudders through the corridors of the City of London before the Admiralty fully realized what was happening and that the City of London ultimately had more power than the Admiralty in Victorian England. To this extent, the guerre de course, rather than being a sideshow, would strike at the adversary's jugular with particularly devastating effects.

Although the guerre de course applies primarily to maritime powers, there have been other important examples

where the use of the method, together with traditional blockades and quarantines, can, over time, have a decisive impact upon the economic power and, therefore, war-waging capability of great continental powers. Thus, the British blockade of France during the Napoleonic Wars and the Allied blockade of Germany during World War I were prime examples of how the vulnerabilities of the land powers can be exploited by denying them any real access to seaborne commerce. Similarly, though, the much greater dependency of the maritime powers makes them extremely vulnerable to commerce raiding, especially in the event of protracted conflict. Thus, too, the most spectacularly effective examples of the guerre de course in recent times have been the German U-boat campaigns against Britain in World War I, which very nearly succeeded in knocking Britain out of the war, and the U.S. submarine campaign against Japan in World War II, which almost won the war for the United States and involved very little contact with the Japanese naval forces.

Impact Upon the Soviet Union: Vulnerability of Oil SLOCs

The ability of the small navies of littoral states to seriously interfere with Western commerce was discussed in the previous section, and the point was made that while small littoral states can harass and impose political costs upon the maritime powers there is little they can do in the military context against a determined adversary except in very special circumstances. The Soviet Union also faces major constraints on embarking on a guerre de course against

Western shipping unless (1) it limits its operations to certain geographical areas in close proximity to the Soviet land mass; (2) it restricts its interdiction to once-and-for-all encounters; (3) it secures access over time to major base facilities in distant areas. Thus, while the present disposition of the Soviet fleet is not a source for major concern in the context of a protracted commerce war at sea, in the future this state of affairs could change, perhaps dramatically, if the Soviet Union were to establish major facilities in Vietnam, Iran, and Southern Africa.

For example, if a Soviet-backed regime were ever to assume power in South Africa and the Soviet navy were given access to the excellent facilities of that country, it would radically alter the perceptions and probably the realities of the maritime power in the South Atlantic and Indian Ocean. While the chances of this happening in the next decade are very slim, by the end of the century such a possibility has at least to be acknowledged. From the South African ports of Durban, Port Elizabeth, East London, and Capetown, and possibly Walvis Bay on the west coast, Soviet submarines and maritime reconnaissance aircraft could exercise great control over the Cape route. Using the Cape ports as sanctuaries, Soviet forces would be able to establish control of the route which, in the event of a protracted war, would have a major impact upon the Western access to raw materials from Africa and possible from the Middle East-Gulf region. If the Soviet Union also had facilities along the western coast of

Africa, its forces would be able to threaten the vital sea lines of communication across the North Atlantic. Unless the West had access to other bases in Africa, it would be militarily very difficult to dislodge or threaten Soviet forces in Africa. However, it might be possible to (a) circumvent the Cape route; (b) cut off the Soviet forces in Southern Africa from their home bases by launching a sustained attack against Soviet maritime capabilities worldwide.

With regard to alternatives to the Cape route, there are four assuming the departure points are in the Gulf or the east coast of Africa: (a) through the Suez Canal and Mediterranean; (b) across the Indian Ocean and through the Indonesian Straits; (3) across the Indian Ocean and through the strait north of Australia; and (d) across the Indian Ocean through the Bass Strait and into the Pacific Ocean. These alternative routes have various advantages and disadvantages. Routes (a) and (b) are the shortest but most vulnerable to Soviet counterattacks from, respectively, the eastern Mediterranean and bases in Southeast Asia. Routes (c) and (d) are likely to be less vulnerable, but route (c) can only take ships of 40,000 tons or less given its shallowness, and route (d) is a very long way around and would nearly double the times of transit. Nevertheless, these routes do point to the fact that a Soviet stranglehold on the Cape Route would be serious but not necessarily disastrous for the Western economies depending upon its strengths and vulnerabilities elsewhere.

As always, however, a distinction must be drawn between the wartime implications of a greater Soviet presence outside its own areas and the peacetime indications. In wartime conditions, many of the constraints that exist in peacetime become less important. For example, in peacetime the United States has studiously avoided using South African facilities for its warships en route from the Atlantic to the Indian Ocean, and vice versa, primarily because of U.S. concern about its political relations with Black Africa. However, if the United States were embroiled in a major conflict with the Soviet Union, or anyone else for that matter, it would probably request permission to use South African ports if the current regime were still in power and if it were militarily expedient to do so.

Where does all this lead to in examining the possibilities of a guerre de course involving the major powers? To what extent, if at all, has the Western strategy ignored the concepts, much as Mahan did at the turn of the century? There seem to be two realistic scenarios in which attacks on merchant ships might occur and could have important outcomes. The first would be in the context of a regional war between small countries in the less industrial world. The ability of one side to isolate, blockade, and interfere with the maritime commercial operations would, depending upon the countries in question, have a significant impact upon a war. For example, if Singapore and Malaysia were ever to become embroiled in a shooting war and if Malaysia were able to close or control the Straits of Malacca and the

approaches to the Singapore Straits, it would pose an extremely serious threat to Singapore since it would threaten the very lifeblood of the nation. A similar problem would face Taiwan or any of the smaller maritime powers who depend upon freedom of access for their basic economic survival.

At the level of great power conflict, it is much less easy to imagine either smaller powers or the Soviet Union attacking Western commerce except in the context of general war. In a general war, however, the issue could become very important, especially if it were thought possible that a nuclear war could extend into a broken-back phase and become essentially a war of attrition. Alternatively, if the Soviet Union had the conventional forces to fight a guerre de course against the West, it could put the West into the position of having to escalate to nuclear exchange or negotiate from weakness.

To conclude, the emerging maritime environment suggests that under certain highly circumscribed circumstances a guerre de course could have a serious impact upon the United States and its Allies, and for this reason some form of sea control should remain a primary mission for the allied maritime forces. However, the simplistic notion that the USSR and its potential allies can deny the West resources by a guerre de course is less plausible given the difficulty of mounting such an operation at sea.

Thus efforts to build forces to protect convoys might well detract from the more important role of deterring Soviet political-military action around the periphery and on the

land mass of Eurasia in areas such as the Gulf and the Horn of Africa.

Maritime Superiority and the Control of the Sea Lanes

Oil Supplies

The above observations provide the necessary backdrop for exploring the related concept of "maritime superiority," a term used and examined in detail by the U.S. Chief of Naval Operations, Admiral Thomas Hayward, in testimony before the Senate Armed Services Committee in March 1979. Admiral Hayward suggested that maritime superiority means the ability to control those areas of the oceans which the United States and its Allies need to use in peace and war against whatever forces may challenge that control. He further suggested that this would include "the waters around the Eurasian periphery and the economically vital sea lines of communications through the Atlantic, Pacific, and Indian Oceans on which the advanced industrial powers depend so heavily." Admiral Hayward correctly points up the confusion that has arisen concerning the use of the term "sea control" and "power projection" as missions to be pursued in the goal of maritime supremacy. He asserts that keeping control over the sea lanes implies much more than keeping the sea lanes open in the World War II convoy sense for, as he points out, one way to insure sea control is to deny an adversary the ability to use his maritime forces against the sea lanes. This often requires offensive military operations that more readily, but not necessarily, fall under the heading of power projection.

The confusion can best be cleared up if an example is given. Consider, for instance, the oil sea lines of communications from the Persian Gulf to the Western industrial countries. No one can deny that an important western objective is the defense of these SLOCs. However, what becomes clear upon careful analysis is that the ability of the Soviet Union and its surrogates to seriously threaten the security of the SLOC varies greatly along the length of the SLOC for, after all, what is important here is the security of oil shipments; without the oil, the SLOC, per se, is of little strategic value. That is to say, what we are talking about is the need to protect oil from the Persian Gulf which, during part of its journey from the wellhead to final consumers, has to be transshipped by tanker across at least two oceans. In other words, to emphasize protection of the oil SLOC without parallel concern for the protection of oil fields, collecting systems and local and final terminal facilities would be to stress only part of the problem and it can be surely seen that oil production - as distinct from oil SLOC protection -- requires different types of military capabilities, not all of which necessarily belong in the category of maritime missions.

To illustrate this further, consider the problem of protecting oil from Saudi Arabia destined for the United States. At present, much of this oil is pumped from the vast Ghawar oil field in southeast Saudi Arabia. After it has been extracted from the ground by pumps, it flows along

a series of pipes to a central "collecting" area where the oil has many of the more volatile products extracted. From this collecting, separation and stabilizer plants, it flows to the local terminal and refinery facilities at the port of Ras Tanura on the Persian Gulf. Here some of the oil is stored, some is refined, and some loaded directly onto the supertankers. The supertankers then sail down the Gulf through the Straits of Hormuz, across the Indian ocean, along the east coast of Africa, around the Cape and across the Atlantic to terminals in the Caribbean. At this point, the oil is offloaded and either refined or transshipped in smaller tankers to U.S. ports.

Thus, for analytical purposes, at least eight discrete stages of the oil flow can be identified, which, in military terms, pose an adversary with eight discrete target sets: the oil fields, the collecting system, separators and stabilizers, the local terminals, the transshipment in tankers within the Persian Gulf, the transshipment in tankers across the ocean, the offloading facilities in the Caribbean, the tankers in transit from the Caribbean to the United States, and the final U.S. terminals. Clearly the most vulnerable elements of this chain are those at the beginning. In short, the oil is most vulnerable when it is in the Gulf area itself. If the Soviet Union occupied the Gulf or could close the Straits of Hormuz, or interdict the oil fields, collecting system, and local terminals, the oil would not get to the United States no matter how superior our military capabilities were along the rest of the chain or SLOC.

While this point might seem obvious, it is important to stress in view of some of the more simplistic statements that are made concerning the threats to the sea lines of communication. In fact, the least vulnerable stage of the oil flow from the Gulf is presently the trans-oceanic stage (This could become more vulnerable if the balance of power at sea changed but, as has been pointed out elsewhere, this would require major geopolitical shifts and changes on the land mass of Asia and Africa which would result in the construction of maritime bases along the littoral.

Naval Missions

In view of the complex characteristics of the oil flow from the Gulf, what is the role that naval power can play in protecting these vital interests? To return to the target categories, maritime forces can play an extremely important role in the protection of the land base elements of the oil flow essentially in two ways: to act as a deterrent against attacks by maintaining a "presence" in the general area of the Persian Gulf; to be able to use military forces in the event of conflict both to protect oil facilities and, perhaps most important, to secure forward facilities which can later be used by ground and tactical air forces.

The point is that no sensible maritime strategy can be envisaged that does not also take into account the environment on the land mass from which most of the resources come. To put it more explicitly: in the context of the Persian

Gulf, a forward based and assertive maritime policy postured by the United States, in the absence of an overall strategy for using military power in the Gulf, will not cover some of the most likely military contingencies in the region and certainly not the most serious ones, namely, a Soviet invasion of the Gulf.

There is an important general lesson concerning maritime power to be applied for an analysis of the Gulf problem. The Gulf case demonstrates the close interplay between the maritime posture and the balance of power on the land mass. It suggests that a shift of the balance of land forces will have an important and perhaps decisive impact upon the balance of maritime forces and, in theory, it suggests that a position of maritime superiority could rapidly shift to one of maritime inferiority if control of the land mass were to change. Thus, while the United States presently has what would appear to be maritime superiority in the Persian Gulf-Indian Ocean region primarily on account of its superior support facilities and maritime air capabilities, a Soviet military presence in Iran, or for that matter Saudi Arabia, could decisively change the balance since it would permit the Soviet Union a secure base in the Gulf and, in the case of Iran, direct land access to its southern borders. It would also permit the use of local air bases by Soviet naval aviation (SNA) aircraft, such as the Backfire B, which provides an impressive addition to the aerial coverage and, therefore, threats to the U.S. fleet in the northwest quadrant of the Indian

Ocean and in the Gulf itself. (In fact, a Soviet presence in Iran would make any U.S. naval presence in the Gulf extremely risky in any shooting war.) Similar radical changes in the maritime balance in the eastern Mediterranean would occur if Turkey were to cease to be a member of NATO or, in extremis, were to fall under Soviet control in a war or crisis.

One reason for stressing this close interrelationship between the land and maritime balance is to redress the often used tendency to talk of land and maritime forces as substitutes for one another. In reality, they complement each other for most of the critical war-fighting missions. Thus in any serious Persian Gulf contingency which had as its goal the protection of oil supplies against a major attack, maritime forces would play a vital role in the early stages of the conflict but the long-run control of the Gulf would more appropriately be assigned to ground and tactical air forces.

Exceptions to these conclusions would be cases where the United States could secure no land facilities and therefore was forced to fight or intervene with maritime forces. In this case, a serious question would be the extent to which the U.S. maritime forces had ready access to supplies and other rear-based facilities. To contemplate the use of maritime power in Southeast Asia does involve considerably easier logistic problems than similar operations in the Persian Gulf, where, if no land bases are available, the

nearest support facilities are on Diego Garcia.

It can hopefully be seen then that the concept of sea control is not very helpful unless it is specified "what is to be controlled" and at what point along the line of communications and against what forces and of what expectations of the outcome. This last point is relevant, for unless some level of tolerable losses is established, it will never be possible to say with certainty that a specific LOC is "secure." Thus it can be suggested that the purpose of protecting western oil tankers or mineral bulk cargo carriers as they steam across the Atlantic is not insure 100 percent survivability, but to insure that in the worse-case scenario enough ships would get through to insure that the supplies at the far end were sufficient to carry on the war effort.

Mineral Supplies

The other case, aside from Persian Gulf oil, that is often cited today relates to the mineral dependency of the West upon southern and central Africa. While there are conflicting arguments as to how vital the minerals, including gold, chrome, and vanadium really are to the Western economies, there is great ignorance concerning the correct nature of the threats to these products. Unlike the Persian Gulf oil, African minerals are found over an enormous area in several very different countries. Unlike oil, minerals are usually exceedingly difficult to extract from the ground and, consequently, are much more labor-intensive. Minerals

are also bulkier and, therefore, more difficult to transfer from interior mines to coastal outlets. With the exception of iron ore, which can be mashed into liquid and literally pumped from minehead to port, most minerals have to be transshipped to the coast by truck or railroad. Although each stage of the logistics route is vulnerable to military interdiction, neither this option nor the option of interdicting bulk carriers at sea carry the most serious threat for the West.

The threats that should be of concern relate to the viability of the industries themselves and the extent to which political and military unrest throughout the subcontinent could jeopardize the operations of mineral extraction. For example, strikes and sabotage at the mines could effectively cripple production - and to this extent there is an analogy with oil vulnerability. Civil wars could disrupt the fragile land logistics systems that connect the mines with the ports. Consider, for instance, the difficulties that Zaire and Zambia have faced over the past few years as they have tried to market their copper products. In both cases, they have found that their railroad links have been subject to disruption and in both cases they have eventually had to rely on the good graces of their hated adversaries in Rhodesia and South Africa to market their products to the outside world.

But perhaps the most significant difference between oil and mineral products is in the economic arena. The chances

of a mineral cartel are not nearly so high as an oil cartel. Also, most producers of the minerals need all the funds they can get and for that reason have an incentive to seek international markets irrespective of their political ideology. Furthermore, aside from the issue of Rhodesia and South Africa, which are, themselves, extremely important producers of these products, the Black African countries have no common ideology similar to the Arab unity over the issue of Israel and the liberation of Jerusalem.

For these reasons, quite aside from the military considerations, there seems little likelihood that the countries of central and southern Africa could ever deliberately try to withhold their products from the market. This leaves two types of realistic threats to the supplies. First, and by far the most likely, would be a deterioration of the stability of the regimes in the region, including eventually South Africa and Rhodesia, which could result in a breakdown in the logistics of mineral production and transportation, which could lead to serious shortfalls in the Western markets. The second category would be one in which the Soviet Union played a military role and established the capability to interdict and therefore cut off mineral supplies. While this is a possibility, it remains a remote one, for it would require a massive Soviet military buildup in Africa, and the ability to control the sea lanes of the Indian Ocean and Atlantic, a task that the Soviets are presently not equipped to do and one that would not be easy even under the most favorable circumstances.

New Maritime Technology of the Future

The development of new technologies with maritime applications has been nothing short of revolutionary over the past 20 years. In this section, only general technological trends will be examined, as distinct from specific considerations of weapons systems. The list of technologies is impressive and covers everything from improvements in ship and hull design, exemplified by the supertanker, the bulk carrier, the container ships, and for the future, surface effects ships, to vastly improved propulsion and navigation systems, offshore technology for mining and exploration and, last but not least, the exploration of outer space and its relationship to the maritime arena.

The impact of the supertanker and bulk carriers upon maritime commerce has been far-reaching. The economies of scale made possible by such large vessels has helped to keep transportation costs as a very small percentage of the total costs of international trade between distant places. Furthermore, the speed of transit between points has been greatly improved, because of the ability of the new ships to travel intercontinental distances without refueling, and because of their ability to sail through all but the most severe weather conditions. Thus, supertankers from the Gulf and large container ships from Australia can reach North America with no need for port calls except in emergency. While transit stops at convenient ports such as Capetown, (so-called "unauthorized" port calls), are still frequently

made, they would not be necessary in wartime or even in a serious crisis. Thus the endurance and, hence, autarky of the modern transportation ships has increased despite the fact that they are still powered by conventional fuels. Similarly, although there have been several well-publicized occasions when the supertankers have foundered in adverse weather conditions, they are for the most part much easier to sail and navigate in inclement weather than their predecessors. In other words, the sheer inhospitality of the Arctic and Atlantic convoys of World War II would not be repeated today in the event of a major resupply in these areas. ⁶

The major revolution in propulsion has been nuclear powered engines. So far, this has not proven to be economical for commercial fleets though it is possible that this will change as fossile fuels become more expensive and improvements in nuclear engines continue. The great advantage of the nuclear powered ship is its ability to sail for years at high speed without refueling. In theory, the marriage of nuclear propulsion and radical platforms, such as the air-cushion vehicle, could result in much faster ships operating at speeds of up to 100 knots. However, such ships remain in the world of fantasy primarily because of the excessive weight of contemporary nuclear engines.

Other changes in ship design that have had or will have fundamental implications for operations include the roll-on/roll-off concept, which means ships contain their own off-loading capabilities and can, therefore, operate free from

the normal constraints of ports. In military operations, these innovations have obvious merits, especially if deployments in underdeveloped regions of the world are envisaged.

With regard to offshore technology, a major new industry has entered the market worth billions a year. The technology ranges from new technologies for refrigerating fish on factory ships to the construction of gigantic oil platforms taller than the Empire State building that can be operated in hurricane-force winds and in deep waters. Offshore oil and gas exploration and extraction account for most of the new technology, though there have been some equally impressive breakthroughs in the technology for ocean mining.

There have also been great improvements in the design and construction of large super-stable floating semi-submersible concrete platforms upon which a myriad of economic activities can take place, including oil extraction, mining, and nuclear power generation. The impact of the offshore industry is much greater than the immediate product distribution would suggest. In the case of oil and gas extraction, the associated industries have to include the support of offshore operations, which are very widespread in areas such as the North Sea. Perhaps the most futuristic example of these technologies is the vast oil complex in the Norwegian sector of the North Sea that makes up what is known as Ecofisk City, in reality a series of concrete platforms used for oil pumping and oil storage connected by covered passageways.

The Importance of Outer Space

Important as the preceding technologies are, they pale in comparison to the breakthroughs that have occurred in space technology and its impact upon the spectrum of maritime affairs. What space has meant for the maritime arena is only beginning to be fully appreciated, but over the next thirty years it is clear that space surveillance and communications systems will become increasingly critical components of the nation's maritime posture. If, as is anticipated, the economics and military exploration of outer space continue, the relationship with the maritime environment can only grow. Space has become to the sea what the airplane became in the 1930s and in World War II, an essential and integral element in the overall posture. Thus, today it is not possible to compare the naval capabilities of various countries unless one includes in the analysis a comparison of their respective maritime air capabilities, for without air power most naval forces have become extremely vulnerable for all but peacetime presence missions. (For example, a comparative examination of the U.S.-Soviet naval power in the Indian Ocean hinges not only on the number of ship-days each side has in the area, and the configuration and equipment of these ships, but also upon the access both sides have to local airfields and the ability of both navies to protect their ships against each other's air power. Since the Soviet Union has very little air capability on board its ships, it would need to use the Soviet naval

aviation elements flying from the southern Soviet Union in order to challenge the U.S. Navy. Thus, calculations that ignore the Soviet S.N.A. based in the USSR do not square with the realities of the balance.) The same logic applies to outer space; or, to put it another way, if the Soviet Union had control of outer space and the United States was denied access to this milieu, it would give an enormous advantage in all military fields to the Soviet Union.

It is well-documented that generations of senior naval planners in the major maritime countries ignored the importance of the aircraft in influencing the nature of sea control. Today, because of our continuing restrictive perspectives on the nature and purpose of national maritime strategy, we may run the risk of ignoring, or at least not fully appreciating, the potential that outer space has for our maritime posture. While it is true that the U.S. Navy has recognized the value of satellite communications and has accordingly invested large sums of money in outer space programs, the Navy still has a somewhat parochial attitude towards the further exploration and settlement of outer space by the United States, or for that matter, the Soviet Union. One purpose, therefore, of this section is to suggest that just as Mahan emphasized the importance of the geographic configuration of the land mass in outlining his elements of seapower, so, today, we must increasingly emphasize the importance of our relative position in outer space in calculating our maritime posture for the remainder of the century and beyond.

There are many ways in which the relative balance of power in outer space can influence our maritime posture. They range from immediate considerations, e.g., the impact of anti-satellite capabilities on U.S. C³ systems to longer-term issues relating to the ultimate colonization of outer space and interplanetary space exploration. To put the point another way, if the Soviet Union was to become the dominant space power over the next 30 years and establish the ability to control space in the event of international conflict, the implications for U.S. maritime power would be grave indeed. If the Soviet Union could destroy U.S. satellites and protect its own, its ability to change the balance of power in terms of strategic nuclear exchange, power projection, sea control, and the operation of commercial maritime trade would be immense. Just as Douhet postulated that control of the air would revolutionize the land battle - and to this extent his theories were right - so it can be argued that control of space would radically alter the nature of the future land, sea, and air battles.

Fundamental to this argument is the belief that competition and conflict in outer space is a possibility. While efforts to seek the demilitarization of space have been made over the past two decades, banning of specific weapons alone is not the issue. The issue is whether the development of outer space for scientific and economic reasons can be conducted in the absence of traditional competition and conflict. The odds are that it cannot, despite the rosey rhetoric of scientists and other seers who talk about

international space colonies as though the Appollo-Soyuz experiment of U.S.-Soviet cooperation can be expanded on a vast scale. The reality is that the world is becoming more nationalistic, more bifurcated, more divided than ever in the past. The trends within the international system which will ultimately condition the environment in which the future development of space takes place do not suggest an optimistic picture for those who see the future of the world through internationalist eyes. To the contrary, the motivations for going into outer space will, and should, come from essentially nationalistic motives. True, there may be ideal international perspectives as part of the ideology of a new effort in space, but the money will be voted either by taxpayers or by shareholders, or by both groups within the United States who will not subsidize ventures that do not have a major return to the United States either in the form of national security, or prestige, or financial rewards. Furthermore, as suggested earlier, the most casual acquaintance with the history of the past reveals that the motives propelling individuals and nations to seek new horizons and pioneer new frontiers were either based on the necessity of survival from political or economic hardship and repression, or motivated by more complex factors including economic greed, ideology, adventure, and national security. Again, the point is that no international consortium is going to finance space exploration unless the returns seem profitable and justifiable in view of other competing needs. This is why the most likely and most important pressures for a renewed

space effort must come initially from the people of the United States themselves.

Mahan did argue with great persuasion that one characteristic or element necessary for a state to be a maritime power in the 19th century was "seafaring traditions" and a population base that was knowledgeable and experienced in maritime skills. The same applies today for outer space, and in this regard the United States is uniquely placed among nations: it has those skills and it has a large number of intelligent and motivated young people no longer hung up on Vietnam but yearning for adventure and some sense of purpose. This is why a revamped space program makes so much sense. To set goals for the 21st century and fund them would insure that this unique population base would not be dispersed and would not become disillusioned.

How, then, does this discourse on the benefits of outer space relate directly to U.S. maritime power and maritime policy? The connection is relevant at two levels. First, as argued, the control of outer space will influence the control of the sea and vice versa. (If the Russians controlled the sea, they could control the Western economies and, therefore, our ability to exploit outer space.) The future of maritime policy is ultimately dependent upon a renaissance of U.S. national consciousness and an appreciation of the great benefits of expanding U.S. maritime frontiers in parallel to our expansions of space frontiers. This should be sold on the same grounds that space is sold; namely, that there are great economic benefits and strong national security needs for doing this.

Why should the U.S. Navy take seriously proposals for a dramatic reinterpretation of U.S. geopolitical boundaries, and, in particular, why should the Navy take seriously the philosophy of pioneering these new frontiers? The answer surely is clear, namely, that the unique quality and mission of navies are to present an omnipresent force "in being" that can project power on a daily basis rather than on a once-and-for-all strike.

NOTES

1. See G. Kemp, "The New Strategic Map," Survival, March/April 1977.
2. F.H. Parry in E.E. Rich & C.H. Wilson (Eds.), The Cambridge Economic History of Europe, Vol. IV, (Cambridge University Press, 1967), pp. 163-165.
3. Samuel Eliot Morison, The Great Explorers: The European Discovery of America (New York: Oxford University Press, 1978), pp. 47-48.
4. Ibid., p. 41.
5. There are other historical examples that can be used to show political or economic constraints on access to strategic materials inevitably leads to alternative supply patterns. In the 18th century there was no more important strategic material for Britain than the supply of oak beams that were essential for the construction of the most modern warships of the time. At the outbreak of the Napoleonic Wars, Britain's primary source of supply was from the Baltic - Sweden and Russia, in

particular. However, the institution of Napoleon's continental system effectively interfered with and eventually prevented the supply of wood to Britain's dockyards. It became imperative to find alternatives and within a decade Canada and the United States had assumed the role of primary suppliers and, as a consequence, Britain's strategic dependency upon these new sources grew.

6. In the days of smaller ships it was usual for ships destined for Murmansk from the Baltic or North Sea to sail through the passageway between the outer islands and the coast of Norway, known as the Inner Lead. Today the large ships do not need to take this secondary, more time-consuming, but calmer route.

THE CONCEPT OF MARITIME SUPERIORITY

Only in the realm of naval forces is superiority the stated goal of U.S. policymakers shaping the instruments of national policy in the emerging international environment. This Chapter uses as its starting point a critique of the concept of maritime superiority as presented by the Chief of Naval Operations and stresses its complexity and multiple dimensions. Building on many of the CNO's ideas, it argues strongly for the need for a conceptual foreign policy framework which can answer the question, "Superior to What?" and "To What End?"

THE CONCEPT OF MARITIME SUPERIORITY

The CNO's Views

On June 14, 1979, the Center for Strategic and International Studies assembled a group of experts on naval and maritime problems to consider the concept of maritime superiority. The testimony of Admiral Thomas B. Hayward, Chief of Naval Operations, before the Senate Armed Services Committee in March 1979 was used as the starting point of the discussion which then ranged over a variety of important considerations relating to the achievement by the United States of superiority in the maritime environment. This paper uses a synthesis of that discussion as its point of departure.

What is maritime superiority? How should it be defined? Admiral Hayward offers the following definition: "control of those areas which we need to use in peace and war, against whatever forces may challenge that control." While of some use, this definition must be expanded and refined in order to convey fully the essence of maritime superiority. In particular, the concept of superiority cannot be considered in a vacuum, but must include several elements beyond comparative naval force structures and balances. First, the concept must be assessed in terms of a given geographic context. It is one thing, for example, to have maritime superiority on a global basis and another to have it only in a specific region such as the Mediterranean or the seas of northern Europe.

Second, the changing nature of the international system and a concomitant diffusion of power must be factored into a definition of maritime superiority, or at least introduced as a necessary part of the background discussion. Ken Booth has pointed out: "Today, there are few givens. Technical, political, social, strategic and economic forces are all changing, interacting with, and affecting our ideas about the roles of navies."¹ Some analysts have suggested that in the contemporary world the utility of force, particularly naval force, is diminishing. A number of today's more serious problems do not lend themselves to resolution solely through the exercise of military power. Moreover, power in the international system itself has become more diffuse as well as multi-dimensional. The military and economic elements of power, for example, no longer necessarily go hand in hand as they did so often in the past. As a result, some nations, such as Saudi Arabia, are defined as powerful by some standards of measurement, but not by others.

Given such a complex international system, what significance does the concept of maritime superiority hold in the modern world? Clearly, answering such a question requires defense and naval planners to have a coherent idea of what the function of naval forces is to be in today's world.

Therefore, the concept of maritime superiority must include some consideration of broad national strategy and the role that maritime power is expected to play in the

pursuit of national goals. Naval forces can be used for much more than fighting a war at sea. They are also instruments to further national foreign policy in times of peace or in crises short of war. The manner in which they can do so, however, can only be articulated if there is a coherent, well-considered, conceptual, national security framework within which the role of naval forces can be defined. Absent this sort of guidance, the concept of maritime superiority (or inferiority) is rendered all but meaningless.

In 1977, a new U.S. Administration came into office with strategic precepts which - after almost three years - remain to be developed, refined, and clearly articulated. The United States thus remains without a global strategy which, given this nation's insular position, is in fact largely a question of naval policy. By their very nature, navies have greater flexibility, mobility, controllability and availability than other kinds of military forces. These advantages are useless, however, if they are not properly exploited, and only a conceptual national security policy framework, with global dimensions, will provide the keys for that exploitation.

Even a cursory reading of current trends suggests the ever-growing importance of the world's oceans - as the media of continuing strategic competition between the super-powers; as the conveyors and repositories of resources increasingly vital to the functioning of industrialized

societies, and as the arenas of potential new conflict. Nonetheless, it may be debatable whether the United States, in the three and a half decades of its postwar global engagement, ever followed a completely coherent strategy - if strategy is defined as a clearly articulated structure of national goals and of the way in which means toward the implementation of those goals would be marshalled and employed.

To be sure, the U.S. postwar policy of "containment" was premised upon a recognition of the need for a balancing of power on a global scale. Not only did this policy reflect an American global view, but it also provided a framework within which the use of policy instruments, including military forces, could be defined. From the containment theory, for example, the decision flowed naturally to develop a complex world-wide network of bases and facilities designed to inhibit Soviet advances in Europe and Asia, sustain a ring of alliances around Eurasia, and support U.S. military operations abroad.

In the two decades following World War II, profound changes swept the international system. A host of new actors emerged, technological development accelerated at an unprecedented pace, and shifts in wealth and power reshaped the geo-political map of the globe. The "Nixon-Kissinger Doctrine" attempted to accommodate these changes and to deal with the growing interdependence of international problems. It was an attempt to evolve a new policy framework to respond to new international

realities. Whether containment or the Nixon Doctrine were wise policies is not the issue; they are merely cited as examples of a national strategic concept that provided the necessary context for evaluating the utility of military power, the role of military forces in the modern world, and the force requirements flowing therefrom. Such a framework is lacking today. A recent study on U.S. military bases made a telling point in this regard: "The instruments of military power inevitably become the first casualties of national indecision. Military power cannot be understood or defended unless it is harnessed to purpose - and purpose can only be defined in the context of comprehensive strategy."²

To argue the need for a new conceptual framework for U.S. national security policy, however, is not to suggest a return to the policies of the past. In fact, the development of an offensive grand strategy is not an option reasonably available to the United States today as it was in the period of U.S. hegemony after World War II. It should be recalled that even at that time, when the United States was so decisively predominant, American grand strategy was by and large defensive. The United States opted for the primarily defensive and reactive containment strategy designed to check any Communist effort to penetrate beyond the Eurasian periphery.

Today, with a much weaker military and economic base, the United States does not possess the requisite power to pursue a policy even as positive, in a military sense, as containment. The Nixon Doctrine was in large measure a

recognition of the decline of American power, substituting diplomacy and international cooperation for military strength as the major vehicle for exerting American influence.

The United States must adjust to the same imperatives today as it seeks to formulate a new global approach to international issues. Any new American national security policy concept must be based on flexible military power - power which will enable the United States to achieve and maintain a credible position in a rapidly changing and highly unpredictable international environment. This new concept must attempt to build a base - political, economic and psychological, as well as military - for maintaining international stability.

In a relative sense, the United States is no less dependent than 19th century Britain was on access to vital world resources and maritime links to distant regions. Just as in Britain's case, the United States, for political and military reasons, cannot expect to fight on the ground in the forward regions of the world, except in a limited sense. Thus, the United States must - as Britain did - attempt to achieve international stability not through the constant application of force but by the creation of an international milieu that favors stability. This milieu can only be established if the United States is perceived as committed to its global responsibilities. U.S. military power, therefore, must be manifest globally, and the way in which that can be achieved is through the deployment of maritime power.

In the new concept, the United States must carefully consider the primary threat to the United States itself and its allies. On close examination, the threat would appear to be in the first instance, at least, global and regional instability and only in the second instance the Soviet Union's military strength. It is the breakdown of stability on a global and regional basis which is most likely to lead to a major confrontation between the United States and the Soviet Union. Thus, again, the principal threat is that of instability - initially, at least - rather than the Soviet Union or any other country. If instability occurs, the United States might then require the full range of capabilities to confront the Soviet Union militarily. U.S. naval power must play a key role in undergirding regional and global stability.

A key factor in achieving this objective is the perception of U.S. military power globally. In sum, the new conceptual strategic framework must be based largely on appropriate forces and deployment policies to provide the psychological and political foundations for global stability. Many of the more serious potential military problems will not occur if instability can be prevented. The forward deployment of the appropriate maritime forces is vital to the successful formulation and implementation of such a concept of strategy.

It is in this context that the concept of maritime superiority must be considered. Although Admiral Hayward suggested that superiority itself must be an overarching

principle of U.S. national strategy - albeit not discounting the pre-eminence of nuclear deterrence - without a conceptual policy framework the question remains: superior to what?

Without guidelines provided by such a framework, the factors defining superiority have no reference points and precision in strategy or planning is essentially unattainable.

I. First Principle

In setting forth his views, the current Chief of Naval Operations, Admiral Thomas Hayward, has postulated eight principles of national strategy. His first - and clearly the most important one - states that "...any conflict between NATO and the Warsaw Pact will inevitably be worldwide in scope." This notion, of course, is in conflict with the apparent U.S. national strategy as suggested by the recently surfaced debate over the so-called "swing strategy." In a column which appeared in the Washington Post on October 8, 1979, Evans and Novak take issue with the findings of the Consolidated Guidance Study No. 8 (CG8), prepared by the Office of the Secretary of Defense. Evans and Novak discuss the emergence of an internal Defense Department debate by citing some of the footnotes and reservations attached to the study by the military chiefs.

In stark terms, the "swing strategy" envisions movement of the bulk of the Pacific Fleet to Atlantic waters to assist in the battle of the North Atlantic theater. Implicit in this strategy is abandonment of the Pacific Far East and the Indian Ocean. The foregoing article cites the U.S. Commander-in-Chief Pacific as saying that under these circumstances

he would have to "...turn his back on U.S. Alliance commitments and become totally defensive in order to survive in the Pacific."

The clear implication herein is that he would draw a defensive line between Alaska and Hawaii and seek to hold it against any Soviet offensive action in the Pacific. The implications for Japan, China, and the rest of the nations on the Western Pacific rim seem obvious. That there are serious questions being raised about the "swing strategy" in defense circles is borne out too in a major article by Richard Burt in the New York Times of October 9, 1979. Burt writes that a staff study prepared early this year for the Secretary of Defense, "... questions several aspects of existing military policy toward Asia", especially in regard to the swinging of forces from the Pacific to the North Atlantic in case of a NATO/Warsaw Pact war. This strategy could lead to the abandonment of China and Japan and the alienation of much of Asia. One need only recall the situation in the Far East during World War II. Severely limited quantities of military assistance reached China, most laboriously air-lifted across the famous "Hump." The reason, of course, was that the Japanese Fleet was interposed between American naval forces and the Asian mainland. Execution of the swing strategy would place Japan and China in the identical position, only this time it would be the Russian Far Eastern Fleet providing the barrier.

On another plane, the maintenance of Communist China as a possible active military opponent of Russian designs is clearly an important defensive consideration. However, there are those - in the United States and Europe - who maintain that such a view of China's importance overlooks the real possibility that Moscow will perceive any growing closeness between the United States and the PRC as evidence of a shifting of the balance of power against the U.S.S.R., thus encouraging the Kremlin to strike out now for major foreign policy objectives while there still is time. Thus, it seems quite clear that this particular principle has profound implications for U.S. national as well as NATO defensive strategy.

This "principle" can, on examination, be seen as being closely related to all the other principles adumbrated in Admiral Hayward's statement. One thing, to be sure, is evident. That is, the importance of this principle or strategic concept requires considerably more evidence to support its validity than its mere assertion as is largely the case in Admiral Hayward's statement to the Senate Armed Services Committee on March 28, 1979.

In short, Admiral Hayward's attempt to gain acceptance of the notion that a NATO war would be a global war - whether a principle of national strategy or not - is an important step in the effort to orient United States strategic planning toward such a global concept. The idea that a NATO war would

inevitably be worldwide in nature forces the U.S. planner to incorporate the full range of political, military, and economic factors of the global environment into a strategy for dealing with a war which begins in the North Atlantic. Concomitantly, it raises the possibility that a NATO war could very well begin elsewhere where vital NATO interests are involved.

Moreover, it may very well be that any NATO war will evolve so quickly that Western forces will have to defend in Europe with what forces are available at the outset. As the former Supreme Allied Commander Europe - General Alexander Haig - put it, an armed conflict in NATO Europe is likely to be a "come as you are war." In such circumstances, the continued stationing of some fifty Soviet divisions - and associated aviation units - on the PRC border would be critically important to NATO.

II. Second Principle

Admiral Hayward's second principle - "U.S. Navy forces must be offensively capable" - relates, of course, to his fourth principle - exploitation of Soviet geographic disadvantages - as will subsequently be seen. Insofar as this specific issue is concerned, it is clear that the ability to carry the war to the enemy is crucial. The alternative is to adopt a completely defensive posture, thereby leaving the entire initiative to the enemy. Any study of military or

naval history will quickly reveal that such a strategy is a prescription for defeat.

The ability to employ naval forces in an offensive mode, permits planners to survey, then exploit the inherent weaknesses of any enemy's position. For example, with the exception of the naval base at Petropavlovsk, the Soviet Navy does not enjoy free access to the open sea by any of its major fleets. Each is constrained, in one way or another, by elements of maritime geography. From the Kola Peninsula bases, Soviet fleet units must negotiate the GIUK Gap before debouching into the open waters of the Atlantic. The Baltic Sea fleet is trapped behind the narrow waters of the Denmark Straits. And, as is well known, the Black Sea fleet must transmit the Dardenelles to reach the Mediterranean. Whether the offensive capability referred to herein constitutes carrier air strikes against surface units attempting to navigate these narrow choke points, their offensive mining, or strikes at the bases from which the Soviet ships must sail, it is clear that, militarily, this is the most efficient use of naval power insofar as the West is concerned. There are other examples.

Of perhaps equal significance is the fact that absence of an offensive capability on the part of the United States essentially would provide the Soviet Union with a number of

naval sanctuaries, with all that implies. If no threat can be posed to Soviet naval forces before they reach the GIUK Gap, for example, the entire western coast of Norway would be exposed to undeterred Soviet attack, and forces normally required to defend naval units between the North Cape and the Gap would be released for offensive operations elsewhere. Many other examples of the advantages to be gained by the Soviets in the absence of an offensive naval capability could be cited. Suffice to say that abandonment of the initiative to an enemy - whether by providing him with a clearly defined sanctuary or assumption of a supine defensive posture is a violation of one of the prime principles of war. The United States has learned this lesson on several occasions since the end of the Second World War, in Korea and Vietnam in particular.

III. Third Principle

The third "principle" articulated by Admiral Hayward contends that "...the U.S. Navy is clearly outnumbered by our principal adversary and is likely to remain so far into the foreseeable future." As those who have engaged in the debate over relative U.S. and Soviet maritime strength are acutely aware, the numbers argument, by itself, is a quagmire of assertion and counter-assertion from which no one - navalist or anti-navalist - ever emerges unscathed, let alone triumphant.

To be sure, numbers are important, especially for a nation with global maritime responsibilities. Despite the incredible technological advances which have been made in recent decades with respect to warship construction, one immutable fact remains: a single ship cannot be in two widely separated places simultaneously. The advanced technology embodied in a modern, nuclear-powered, missile-equipped, American warship, for example, is totally irrelevant if that ship is sailing Central or North Atlantic waters, while a vital interest of the United States is being placed in jeopardy by Soviet naval forces some thousand or more miles distant.

That having been said, one must add that there are other, critically important considerations which must be taken into account in any calculation of naval balances. With regard to U.S.-Soviet comparisons, these include combat capability; endurance; technological advantages; experience, initiative, and expertise of ships' companies; and survivability; to cite just a few. Moreover, external factors often play decisive roles. In the instant comparison, for example, one would be remiss not to recognize the impact of geography.

Insofar as the United States Navy is concerned, there can be little argument with the contention that the large-deck aircraft carrier - it certainly remains the cutting edge of conventional naval power - represents a clearly decisive

American advantage with respect to Soviet naval prowess. Similarly, the amphibious capability epitomized by the U.S. Marine Corps, together with the sea lift capacity still possessed by the U.S. Navy cannot be matched by the Russian fleet. It needs to be said, of course, that the expanding Soviet capability to take tactical aviation to sea suggests that Moscow recognizes the importance of the carrier, and the emerging Soviet naval building program encompasses the manifest danger that this particular American advantage could be neutralized or offset in the years ahead. Likewise, it is generally accepted that the amphibious arm of the Soviet Navy is one of the fastest growing aspects of the fleet. This, too, could prove in the long run to be a temporary American advantage.

All too often overlooked by pro-navalists when making comparisons between these two navies, however, are a number of weaknesses on the Soviet side. For instance, it is generally agreed that while Soviet combatants are usually faster and more heavily armed than their American counterparts, their steaming ranges are appreciably shorter and their on-board weapon re-load capability is thought to be low to non-existent. This, to some extent, renders them "one-shot" ships. Moreover, instances such as the loss of a new missile destroyer with heavy loss of life in the Black Sea in 1974 - reputedly following an engine-room fire and subsequent explosion - suggest that damage control capabilities of Soviet warships are decidedly deficient. Taken together, these

factors raise significant questions with respect to their staying power in a wartime environment; a factor of supreme importance in anything but a surprise, suicide-type attack on opposing naval forces.

As already observed, the Soviet Navy also suffers from some severe geographic constraints. Only in the Pacific Far East, specifically at Petropavlovsk, do Russian warships enjoy direct access to the open sea. The other three Soviet fleets, of course, are each contained behind geographic barriers which are ripe for exploitation by the West so as to deny them free transit to those open ocean areas where they can do serious damage to Western mercantile and naval operations. And, it should be noted, these geographic barriers are exploitable against Soviet surface, sub-surface, and air operations alike.

In brief, these are some of the many considerations which must be taken into account in striking any sort of naval balance between the United States and the Soviet Union. If to these calculations, the naval forces possessed by the allies of the two superpowers are added, one would find that the numbers advantage enjoyed by Moscow is not nearly so great as it would appear to be at first glance. This reality, however, must be qualified, in turn, by the huge superiority in attack submarines boasted by the Soviets and the sea-denial nature of the Soviet fleet mission which would obtain in any NATO-Warsaw Pact war. Moreover, the timidity evidenced by our NATO allies during the recent embassy crisis

in Iran and the brutal Soviet invasion of Afghanistan suggest that any American planning for wartime contingencies vis-a-vis the Soviet Union should take into account the possibility that those allies might choose to sit out a major confrontation in the forlorn hope that the United States would handle it alone. In such circumstances, the Soviet-U.S. naval balance would be a central consideration.

Therefore, the foregoing arguments notwithstanding, the point made by Admiral Hayward with regard to numbers of ships should not be dismissed out of hand as too simplistic. The "swing strategy" was originally premised - and still is - on the unpalatable reality that there are not enough ships in the United States Navy to fight a naval war in the Atlantic and the Pacific Oceans simultaneously. Moreover, the problem of inadequate numbers was brought forcibly home when, in the wake of the recent revolution in Iran, Washington's attention was focused on the apparent necessity to create a Fifth Fleet or at least a sizable naval squadron in the Indian Ocean. It became immediately and painfully obvious that such a force could not be fashioned without slicing deeply into the muscle of the Sixth or Seventh Fleets, either alternative being clearly undesirable.

Thus, one returns to the premier Hayward "principle" which asserts that any NATO-Warsaw Pact war will inevitably be global in nature. If the United States is to be prepared to prosecute successfully such a war, it must have the naval capability to meet contingencies on a world-wide

basis. Given the foregoing facts, it is exceedingly clear that the U.S. Navy, shrunken to its smallest size since the days prior to World War II, no longer supported by a numerically larger and fully capable Royal Navy, and confronted by the expanding, blue-water fleet of the Soviet Union - albeit with all its shortcomings - is not presently adequate to meet the far greater, global responsibilities with which it is burdened today. In short, it is easy to understand Admiral Hayward's concern with numbers. Furthermore, the domestic political problems which perennially plague any suggestion to increase defense spending in the United States just as easily explains his pessimism over the prospects of rectifying obvious American naval deficiencies in the foreseeable future.

IV. Fourth Principle

The fourth principle stresses that we must exploit Soviet geographic disadvantages and continue to deploy naval forces in locales which provide us strategic advantages. It is important that we make the Soviets understand that in war there will be no automatic sanctuaries for their forces. It is important to bear in mind that the "swing strategy" would do precisely that for the Soviets, i.e. leave them sanctuaries throughout the Pacific Far East region.

If, on the other hand, the United States were to maintain significant naval forces in the Western Pacific, one could expect Japan to remain a bulwark of Western strength and Communist China to believe that adherence to its present

strategy would best serve its national purposes. The ultimate result of such a Western strategy would then be to keep the Soviets preoccupied with defensive concerns - fear of a two-front war - thereby locking up their naval and land forces in areas close to the western boundaries of the USSR, and thus, limiting their ability to initiate land campaigns against NATO Europe, conduct operations in support of offensive thrusts on the flanks of NATO, against NATO's sea lines of communication (SLOCK), or elsewhere, such as in the Middle East.

This particular principle is intimately related to the first one, namely the view that any NATO war will inevitably be worldwide in nature. If a NATO war were considered in this way, the United States could exercise the option of confronting the Soviet Union with the threat of war in the vast area east of Suez and, especially, in the broad reaches of the Western Pacific. In this instance, the United States could force the USSR to face the problem of a two-front war, and could do so largely by continued deployment of United States naval/air power in the Western Pacific Ocean. By retaining sufficient naval forces in the Western Pacific, the U.S.S.R. would be prevented from cordoning China and Japan off from American military assistance.

Thus, Soviet planners could be forced to consider the threat to their western flank, calculations of Chinese military strength and Peking's possible reactions. Moscow would thus

have to determine what its conventional forces - air, land, and sea - could do. The resultant reduction in Moscow's flexibility, and the uncertainty which it would introduce into Soviet calculations, may have not only a major effect on Moscow's military planning, but could serve as an important - perhaps decisive - deterrent to Soviet adventurism in the first place.

And finally, by varying the traditional deployment patterns of the past, for example, periodic and random deployment of one of the carrier task groups historically maintained in the Mediterranean, (e.g., 60.2) to the North Atlantic, the United States would infinitely complicate the war and contingency planning of prospective enemies, most especially those of the Soviet Union. The Soviet task of planning for operations against American fleets would encompass new, unaccustomed, and heavy strains on the Soviet Navy.

V. Fifth Principle

Admiral Hayward's fifth principle, states that U.S. defense planners must make every effort to "integrate relevant capabilities of the other U.S. services and U.S. allies into the campaign to defeat the Soviet and Warsaw Pact navies." The statement of this principle underscores certain deficiencies in U.S. naval capabilities. Mine clearance, for example,

whether at U.S. ports or elsewhere, is a task for which the U.S. Navy probably is not adequately prepared. American allies may not be able to fill in any of the gaps, but recognition of the contributions they can make is a first step. Moreover, it is important not to necessarily limit the tasks of Allied navies to what may be essentially coastal defense functions. Allied navies already contain respectable offensive strengths - air power for example - that can and should be exploited as widely as possible.

Defining the tasks of Alliance navies, however, including the role of the U.S. Navy, raises several questions for American defense planners. Is it in the U.S. interest to cooperate in the expansion and development of Western naval forces? To what extent is it in the U.S. interest to emphasize division of labor or duplication of effort among Western navies? U.S. policy toward Japan represents a good case in point. The Japanese do not know what their future maritime strategy should be. In furthering American interests in the Pacific, then, should the United States try to divide maritime responsibilities with Japan? Or should emphasis be placed on performing the necessary tasks jointly, thereby implying a certain duplication of effort with all of the inherent advantages and disadvantages?

With respect to NATO Allies the problem is compounded by the question whether it is in Alliance interests to delegate

regional responsibilities. To some degree, this has already been done in the European theater. Moving beyond NATO's formal boundary of the Tropic of Cancer, however, complicates the situation. The national interests of NATO members extend well beyond Europe - their energy interests in the Persian Gulf, for example - yet it is extremely unlikely that NATO as an alliance will formally extend its area of concern beyond that which has already been defined. Who, then, in a crisis would clear mines from the Straits of Hormuz? The task would clearly fall to the United States Navy. There has, however, already been some progress in this direction in that NATO can now plan for contingencies below the Tropic of Cancer, but is not yet permitted because of political and economic reasons to assign forces to or exercise them in the area, even forces already in being.

In some circumstances Allied navies might coordinate with American forces. The large French contingent in the Indian Ocean, for example, may perform a joint mission with U.S. forces there during a regional crisis or global war. For the most part, however, NATO members will look to the U.S. Navy and its capacity for global operations in the event of crises beyond Europe. The question remains, therefore, whether considerations of these external responsibilities should be included in deliberations regarding the division of responsibilities among the naval forces of NATO members.

In addition to the potential Alliance contribution to the general naval balance, Admiral Hayward's statement identifies elements that have too long been neglected but

which may also make a contribution, namely, other domestic U.S. services. The Coast Guard and merchant marine, in particular, must be more fully incorporated into defense planning. Both of these services, however, suffer from serious problems. The emerging maritime environment has made much more important the performance of the constabulary role along U.S. coasts, especially in peacetime. Yet the Coast Guard does not have adequate resources at its disposal. In the case of the merchant marine, its integration into defense planning, the incorporation of technologies into merchant vessels that would greatly improve support of naval operations and logistics planning in which the merchant marine is critical have been inadequate. If sufficient attention and funds were devoted to these auxiliary policy instruments they could make useful contributions to U.S. policy and make defense planning a little easier. As long as they are neglected, however, they will remain wasted assets and deteriorate to the point at which they are no longer assets at all.

VI. Sixth Principle

Admiral Hayward's sixth principle stated that a major conflict could be a "come as you are" war, fought essentially with what forces were available at the outset. Clearly, this is true for short-war scenarios. Similarly, if a major conflict erupts, and if one accepts that it would be a global war undercutting the viability of the "swing" strategy then NATO theater naval forces should expect little in the way of significant additional forces during the early stages. The

possible exception is the Naval Reserve which, as Admiral Hayward points out, will enhance our capabilities in certain specialized warfare areas and provide some unit and personnel augmentation for active forces. Given the inability to reinforce Atlantic units from the Pacific in a major conflict, a reconsideration of the way in which adequate forces are to be provided must be undertaken.

In a "relatively protracted " conflict, of course, there should be an opportunity to mobilize resources to augment existing naval units, Admiral Hayward's arguments to the contrary notwithstanding. Logically, at least, the concept of "come as you are" seems out of place, if not incompatible, with a conflict that is "relatively protracted," except in its early months. Obviously, the argument hinges on the definition of such a conflict, specifically its duration.

Moreover, the "come as you are" concept implies inadequate warning and the quick eruption of conflict. Neither will necessarily be the case. To be sure, the decision to act in the face of warning signals that would be contradictory, ambiguous and unclear is extremely difficult politically. Yet, the success of NATO's entire strategy, not only in the naval dimension, rests upon receipt of adequate warning of a major conflict. Given such warning, some augmentation of existing units can be initiated and the resources mobilized to some extent for further bolstering the naval effort. The success of that augmentation, then, would rest heavily on the duration of the conflict. Given enough time, Alliance efforts could be quite successful. For a shorter

term, there is much less reason to be sanguine. Again, the issue hinges on the definition of adequate warning, long a subject of intense debate within NATO and one on which there is no consensus to this day.

Nevertheless, even now the Navy holds options for augmenting its existing units that should be exploited. Incorporating technologies into merchant vessels, for example, so as to allow for their rapid arming should conflict occur, is one such alternative. Yet, insufficient coordination has existed between the Navy, the Maritime Administration and the merchant marine industry in design and construction of new merchant vessels. Increasing the number of Ro/Ros is another option that could prove extremely useful, yet there are still too few in number. In short, U.S. naval planners must ask themselves what other assets are already available and how they can best be exploited now and in the future, to augment existing capabilities should the U.S. Navy have to "come as it is" to a major conflict.

VII. Seventh Principle

As a seventh principle in defining maritime superiority, Admiral Hayward stated that "U.S. naval commanders must be governed by the concept of 'calculated risk' ... they must select engagement opportunities which promise attrition ratios clearly favorable to the U.S. side." Calculated risk, of course, is a fundamental principle of war. But Admiral Hayward's statement needs some degree of elaboration. The calculations cannot invariably be confined to exchange ratios.

It would not serve the interests of the country to preserve all the ships in a naval task force by avoiding combat, for example, with the result that the enemy was enabled to inflict a critical and irreversible defeat on the United States. It should be borne in mind that the calculations must weigh the objective sought against the prospective cost of achieving that objective. Not infrequently in war, combat units have had to be sacrificed in the interests of achieving a higher objective.

VIII. Eighth Principle

Admiral Hayward's final principle focuses on the adequacy of residual forces in a post-conflict environment. He argued that "the force balance existing at the end of a NATO-Warsaw Pact conflict would be of critical importance in determining not only the terms of settlement, but in protecting U.S. vital interests in what would undoubtedly be a highly unsettled and conflict prone world." There can be little argument with this contention. It should be pointed out, however, that regardless of the nature of the conflict, its global dimensions - if one accepts the premier principle Admiral Hayward enunciated - would render naval forces an indispensable element of national power. As a matter of fact, in many instances, naval forces could prove to be the decisive element simply because they would constitute the only military power which could be brought to bear.

Conclusion

The concept of maritime superiority is as complex as the contemporary international environment of which it is a part. It is not enough, therefore, to speak of it in terms of using the sea despite interference from enemy actions, or to deny that enemy similar use. Several other factors must be included in any articulation of the concept of maritime superiority.

The most obvious factors are the physical elements-- numbers of naval units, their technological sophistication, the quality of the crews, and others. Even at this level, however, measurement of relative superiority or inferiority is difficult.

There is, of course, another way to approach the problem. That is, to set forth the goals which one believes must be attained, assess the main prospective enemy's ability to thwart achievement of these goals, and then build one's own forces to levels which will reasonably ensure attainment, despite the adversary's actions. Implicit in this sort of planning, of course, is the notion that if one is prepared to meet the threat mounted by the principal enemy, one will possess adequate power to deal with any lesser challenge which might materialize.

Before the military planner can begin to analyze force level requirements on the latter basis, however, he must have a framework within which to operate. Moreover, calculations made in the absence of such a framework, are bound to lead to questionable findings.

Historically, the force sizing methodology used by U.S. military planners has centered on the so-called "worst case" scenario. In short, try to determine the prime prospective enemy's maximum capabilities and then devise the force structure necessary to forestall achievement of his postulated objectives. Force levels, thus derived, have then been deemed to produce "superiority" or "supremacy." The problem with this sort of planning, of course, is that it leads to force levels designed to produce absolute security in the face of any conceivable threat. As real world experience has repeatedly demonstrated, the funding required to underwrite such force levels is simply beyond reason. Therefore, it is imperative that the United States develop a conceptual framework for its global foreign and security policies; a framework sensitive to the contemporary international environment.

This need to define the purpose of military force applies particularly to seapower. Any evaluation of the present international system leads to the inescapable recognition of the growing significance of the world's oceans. The dramatic rise in the realizable economic value of the oceans, their role in hosting the least vulnerable strategic nuclear systems, and the dramatic escalation in the volume of maritime commerce are only some examples of the heightened value of the global seas. Moreover, the oceans have become an important source of disputes and conflicts among states.

The importance of naval forces transcends the growing salience of maritime affairs, especially for the United States. The present and future international environments are fraught with uncertainty. Crises and conflicts are liable to erupt rapidly in unexpected places. Specific threats to international stability cannot be predicted, but the fact of their occurrence can be anticipated with certainty. In this new environment, U.S. policy instruments must be flexible and "precision-guided." In considering military forces as policy instruments, it seems clear that naval forces meet these requirements, to a greater extent than either land or air forces.

Naval forces have historically had a key role in maintaining political stability on a world-wide basis. Since they can be deployed globally in peacetime, without being perceived as being aggressive, they are in a position to make a contribution to regional and global stability in ways not characteristic of the other services, since the latter cannot as easily be deployed close to or in littoral states without raising concern among local peoples and governments.

Stability must be a prime objective of U.S. foreign policy and the maintenance of stability requires the projection of military forces to undergird and support diplomatic and economic initiatives taken in the interest of world security and stability. The projection of naval forces to undergird and support diplomatic and economic initiatives taken in the interest of world security and

stability. The projection of naval forces, and particularly superpower naval forces, is necessary to ensure equipoise in the forward littoral regions of the world.

World crisis problems resulting from a destabilized situation are always extremely difficult to cope with once instability develops. Hence the primary objective of U.S. military policy and strategy must be one of maintaining and enhancing political stability, and secondly that of dealing with the results of destabilization.

Naval forces will not absolutely guarantee stability, but they can help in providing an appropriate security environment in areas of the world where political deterioration appears likely. The Persian Gulf-Indian Ocean region is particularly important in this respect today since it is a region in the process of political transition from traditional rule to greater modernity. This area was maintained in a relative quiescent posture by naval power for centuries by the Dutch, the Portuguese, and for the past 150 years by Britain. There is no littoral state in this area capable of providing the necessary military underpinnings for security and stability. Thus military power must come from outside in the form of large power and superpower forces in order to provide the military foundations for non-violent change.

What has happened in Iran and the Persian Gulf is in some measure related to the withdrawal of British maritime protection of the area in 1971. There is, in fact, a vacuum of adequate military power in the Persian Gulf region,

and it is vital that the military foundations of Persian Gulf security be refurbished if we are not to witness a violent unraveling of the stability and security in that region.

The destabilization resulting from radical change in Iran must be offset in part by countervailing military force to shore up the political and psychological foundations of other remaining traditionally ruled states, i.e., Oman, the U.A.E., Kuwait, Qatar, Bahrain, and Saudi Arabia. This can be done, if at all, through the appropriate deployment of naval power, because historically the most meaningful and acceptable forces projected into that area have been naval forces during the long period of Britain's stewardship "east of Suez."

This area is best described in terms of military force deployment as a "maritime area." Power in the area was always described in naval terms because the power these littoral peoples accepted was that primarily of Britain, and, of course, that meant naval power. Therefore we must deal with this area largely in terms of the kinds of external forces which have real historical meaning for the indigenous peoples and states. No other kind of power from outside will be as significant or acceptable to the regional governments.

The attitude of the littoral states and those who seek to change the form of governance in the area will be influenced in considerable measure by the source, size, and quality of naval deployments to the region as they contemplate their orientation and courses of political action. If only Soviet

maritime forces were deployed to the areas as an extension of the Soviet's regional proximity, then surely many of the local forces would consider their actions in terms of whether the course or positions they adopt would appear antithetical to Soviet interests.

In the United States and in the West generally, there has been a tendency to decouple U.S. diplomacy from the projection of military power. Such decoupling weakens the will of pro-Western or neutral forces to adopt pro-Western positions in the face of Soviet military proximity. Again, this need for projection and coupling of military force with diplomacy can be most acceptably and less provocatively be implemented with maritime forces which have such a long history in the region.

This is just a current prime example. Similar arguments can be made for parts of the Mediterranean littoral as well as the western Pacific. The United States, however, must have the capability to maintain forces deployed on a permanent basis in key littoral areas without being merely reactive to situations of instability. When reinforcement in an area is required on a very substantial basis, it is usually already too late. Naval forces in a stability mission should be in place over a long period of time in the hope that sharp escalation of the U.S. presence will not be necessary at all. The force, for example, in the case of the Indian Ocean, should also be given the same symbolic status - i.e., a fleet designation - as the naval forces in the two other

major ocean basins, whatever its size and composition, or we will be perceived as considering this area as less important than others. Thus the favorable impact on perceptions will be much reduced.

Also, in drawing down other deployed forces for purposes of reacting to a crisis elsewhere we may harm the effectiveness of our stability role in the areas whence the forces are withdrawn.

The flexibility and mobility inherent in U.S. naval forces gives them the capability to respond to a wide range of possible contingencies from deployment during a peacetime crisis to prosecution of armed conflict during wartime. First and foremost, U.S. naval forces help to deter conflict not only through deployment of ballistic-missile submarines but also through forward deployment of combat fleets to potential trouble spots. If crises do erupt, naval forces can be used to contain them through the selective application of military leverage. As a crisis abates, the force can be reduced accordingly. During wartime, the tasks assigned to naval forces will be critical. They include, among other missions, securing sea lines of communication, antisubmarine warfare, interdiction of opposing forces and transport of men and supplies.

In contingencies short of full scale war, the effectiveness of U.S. naval forces cannot be divorced from the symbolism of their deployment. The use of naval forces in a crisis is a highly visible and dramatic demonstration, and their deployment transmits signals to participants in and

observers of the crisis. If the rationale for using naval forces in a specific crisis is developed within a broad framework, then these signals can achieve a broader purpose. The fact that naval forces can be tailored more precisely to a specific situation than other military forces means that those messages can be conveyed as clearly and directly as possible.

The deployment of U.S. naval power to a region in the throes of crisis signals to allies and potential adversaries alike. It purveys American concern and intentions. It reassures allies and demonstrates U.S. strength. It imparts to a broader international audience the fact of a continuing global reach of U.S. power. It inhibits the spread of a given crisis by erecting a barrier to external interventionist powers.

The broad policy framework adopted by the United States must take cognizance of one essential fact - the country's geography. Its continental proportions notwithstanding, the United States is essentially an island. With the exceptions of Canada and Mexico, the United States is tied to the other members of the international community by the world's oceans and seas. This fact makes maritime power indispensable. It must be a fundamental principle underlying any decisions regarding the structuring and sizing of U.S. naval forces as well as their deployment. Equally important, the sizing and structuring of the U.S. Navy must be undertaken within broad, conceptual, guidelines which

relate local conflict scenarios to global American security interests.

This is not to make the case for the indiscriminate use of naval power in response to any crisis. Such proliferate use neither could be supported by available and prospective resources, nor would it be advisable in terms of the imperatives that have been outlined above. The effective application of military power, whether on the battle field or in the psychological-political arena, has to be prudently selective. But precisely in light of this requirement, the decisions of military action (or inaction) have to be attuned to a broader framework of purpose and strategy - a framework which assigns a prominent role not only to immediate and narrow policy concerns, but also to the broader compass of international perceptions.

Finally, it must be said that there is some question whether Admiral Hayward's stated principles qualify for that title or, at least, whether all of them do. The most significant assertion as indicated by the Admiral is the first one, namely that a NATO war will be a global conflict. This idea comes very close to being a global conceptual framework for the use of seapower. One could fairly argue that it constitutes the concept for a national strategy as well.

As already suggested, one of the most serious problems the American military planner presently must face in attempting to forge a strategy for his service and to size the forces to implement such a strategy is the fact that the

United States has no overall global concept and, therefore, no set of strategic objectives. Thus, most efforts to size forces and plan approaches to goals are undertaken in a strategic vacuum. The whole idea of the concept of maritime superiority, for instance, is difficult - if indeed, not impossible - to define without some global policy framework because, in the absence of such overall guidance, plans and force postures can be dealt with only on a regional, ad hoc, scenario basis.

The notion that a NATO war could be confined to the North Atlantic region is, to some extent, a product of this compartmentalized approach to military planning. What Admiral Hayward's principle does - and he does not make this claim for it himself - is force us to think "global" about U.S. national security strategy, especially as that strategy has to do with seapower.

The other principles discussed by Admiral Hayward are among the historically accepted theorems of naval power and doctrine. When discussed within a global concept even as limited as that of Principle One, i.e., a NATO war will be a global one, then they can be highly useful measurements or guidelines for assessing the requirements for maritime superiority.

NOTES

1. Ken Booth, "U.S. Naval Strategy: Problems of Survivability, Usability, and Credibility," Naval War College Review (Summer 1978), p. 12.
2. Alvin J. Cottrell and Thomas H. Moorer, U.S. Overseas Bases: Problems of Projecting American Military Power (Beverly Hills: Sage Productions, Washington Paper Number 47), (1977), p. 2.

FOR WANT OF A NAIL: THE LOGISTICS
OF THE NATO ALLIANCE

In no area is the maritime balance more important than the Atlantic bridge between members of the North Atlantic Alliance. In the first of two chapters to address specific NATO problems, this section considers the broad logistical support role naval forces must play for the Alliance in both peacetime and wartime and suggests that an effective logistics system contributes significantly to the Alliance goal of deterrence. It also examines the serious problems confronting the Navy in fulfilling that role, and recommends several steps to meet immediate needs.

THE LOGISTICS OF THE NATO ALLIANCE

I. Introduction

Effective reinforcement and resupply of NATO Europe in times of conflict have long been recognized as vital components of Alliance plans for successfully countering threats to the national security of members of the Atlantic community. It is this capacity and this requirement to which analysts most often refer in discussions of "logistics of the Alliance." The term "logistics," however, can also be applied to describe supply requirements of NATO members in times of peace as well as in times of war. NATO members do not seem to appreciate as readily the degree to which they are dependent on global sea lanes for their economic health and vitality as well as their national security. The amount of sea-borne imports off-loaded at European and North American ports is staggering, and a continuing flow of these imports is imperative if Western democracies are to ensure the viability of their economies and the stability of the political system which those economies support. Securing that constant flow of sea-borne commerce is as much a concern of those in NATO as delivering troops and supplies to Europe should war ever erupt.

Despite the importance of both dimensions of the logistics of the Alliance, problems associated with logistics have not received the attention they deserve. Logistics is seldom front page news; it can be dull and tedious, focusing as it often does on details relating to stores and

equipment. It does not have the appeal of glamor subjects like "standardization," with its emphasis on high cost gadgetry.

Logistics is perceived as a mundane concern in part because those in NATO responsible for logistics have not done well in convincing people of its importance and the urgent need to address the serious problems in Alliance logistical arrangements. Logistics has too frequently been ignored in international fora concerned with the future of NATO and the problems it must overcome to remain effective in the last twenty years of this century. Lack of attention has in no way diminished the importance of logistics issues for the Atlantic Alliance. In fact, recent developments external to the Alliance will demand that NATO policymakers and defense analysts pay greater attention to logistics and work harder to overcome present logistical difficulties. If the problems are not confronted today, they will be even more serious tomorrow. For the NATO Alliance, an inability or unwillingness to tackle logistical issues could well create a situation in which, at the critical moment, the Alliance finds itself lacking the proverbial nail, the absence of which resulted in the loss of the kingdom.

The purpose of this paper, therefore, is to focus attention on problems associated with both dimensions of logistics of the NATO Alliance. Section II considers NATO's reliance, and especially the dependence of the United States, on sea-borne imports. Section III focuses more

specifically on the problems related to reinforcement and resupply requirements during a European conflict. Either set of issues could be the subject of a book-length analysis, and it is impossible to suggest all the important nuances when combining them into a single paper. It is hoped, however, that through this admittedly brief treatment of the issues, some appreciation of the logistics problems confronting NATO will be sparked, and a sense of urgency will be instilled so that immediate efforts will be made to overcome them.

II. The Peace time Pattern of Logistics Needs and General Shipping Patterns

During peacetime, if the economies of NATO countries are to remain healthy they must enjoy unfettered access to the sea for the export of finished goods to their markets and imports of raw materials that provide the wherewithal to produce those goods. In 1976, the value of world exports totaled about \$990 billion with exports from the United States, Western Europe, Japan and other developed countries accounting for nearly two-thirds of that total. Reasonable estimates suggest that nearly two-thirds of those exports were carried by sea. NATO members and Japan also received nearly three-fourths of all the cargo shipped in international trade in 1975.¹

More specifically, American dependence on seaborne imports is dramatic. Total U.S. imports in 1976, for example,

amounted to approximately \$120 billion, with nearly 70 percent of the total carried by liners, non-liners and tankers.²

Total U.S. imports carried by liners in 1976 amounted to nearly 22 million tons, valued at nearly \$38 billion. The three leading U.S. imports carried by liners were steel products, tropical beverages, fruit and vegetables. In 1976 U.S. liners only accounted for 6.8 million tons or 31 percent by quantity and \$12 million or 32 percent by value of total U.S. imports carried by liners. Imports carried by non-liners amounted to nearly 105 million tons with a value of almost \$14.5 billion. The leading U.S. imports carried by non-liners in 1976 U.S. non-liners accounted for only 2 percent of total U.S. imports carried by non-liners, which represented only 1.7 million tons or \$289 million.

U.S. tanker imports are predominantly represented by petroleum, the largest single import. In 1976 total U.S. tanker imports amounted to 340 million tons with a value of nearly \$31 billion. The U.S. tanker share of these imports was only 3 percent, which represented some 10 million tons or less than \$1 billion.

Although the United States has a critical dependence on seaborne imports, it is discouraging to realize that a relatively insignificant share of U.S. oceanborne imports are transported by U.S. carriers which account for less than five percent of American oceanborne trade. The American economy relies on imported commodities such as steel products, minerals, petroleum and semi-manufactured products, which

would remain vital in time of conflict to support an effective war effort.

The overpowering importance of foreign carrier and ships flying "flags of convenience" to transport imported commodities poses some serious questions about the continued supply of critical raw materials to the United States in an emergency situation.

The extent of U.S. dependence on PanLibHon³ vessels with regard to the importation of several essential nonfuel minerals is defined in the following table:

<u>Description of U.S. Nonfuel Mineral Imports</u>	<u>Percent of Total U.S. Imports Carried by PanLibHon Vessels in 1976</u>
Copper ore and concentrates	53
Bauxite	64
Manganese	15
Non-Metallic Ores	19
Ferromanganese	27
Ferroalloys	10
Aluminum	43
Tin, alloy and unwrought	29

These figures illustrate the U.S. dependence on the PanLibHon fleet. It is not unrealistic to claim that foreign carriers sustain the U.S. industrial economy. Consequently, the capability and availability of the PanLibHon fleet are critical to insure continued U.S. production and growth.

European NATO members are no less dependent on maritime commerce than the United States as a glance at their requirements for vital mineral imports reveals. The resource and mineral deficient countries of Western Europe maintain an even more serious import reliance on critical materials than the United States. West German imports of critical non-fuel

minerals, for example, represent significant shares of the total West German market. Imports of bauxite, copper, and steel products are very large. Great Britain relies heavily on imports to supply the domestic market with many of the same minerals and metals in addition to semi-manufactured goods.

Data from the U.S. Bureau of Mines on approximate distribution of world mineral commodity production by major geographical area suggest the degree to which Western Europe depends on mineral imports. In 1976, the market economies of Europe, which roughly comprise the countries of Western Europe produced the following percentages of World production:

<u>Mineral Commodity</u>	<u>Percentage Share Produced by Western Europe in 1976</u>
Bauxite	10
Copper, mine output	4
Crude Steel	26
Ferroalloys	34
Lead, mine output	12
Manganese	0.3
Nickel, mine output	4
Tin, mine output	2
Zinc, mine output	15
Coal, anthracite and bituminous	11
Crude petroleum	1

Clearly, West European production falls far short of its consumption of these vital raw materials. As a consequence, the nations of Western Europe also depend critically on ocean-borne carriers to transport vital minerals and other raw materials to their home markets.

General Shipping Patterns

In an era of increasing foreign ownership of ocean vessels,

the American merchant fleet has decreased substantially. The United States now ranks tenth in the world according to number of ships and total deadweight capacity. At the close of 1977, the United States maintained 840 ships, which represented 3.5 percent of the world fleet. Of this total, some 57 ships were privately owned, while 269 ships were owned by the United States government. The average age of the United States merchant fleet is 22 years, compared with an average age of 12 years for the world fleet.

The United States merchant fleet is bolstered by an additional 687 foreign ships owned by U.S. companies or their affiliates. Combining these with the U.S. ocean-going merchant vessels would make the United States the sixth-ranked merchant fleet in the world. Thus, the relative importance of the U.S. to the world merchant fleet is greatly enhanced by U.S. ownership of foreign flag vessels, but the availability of these ships in times of crisis is questionable.

The 11 leading merchant fleets of Western Europe, by country of registry and number of ships, for the year ending December 31, 1977, are summarized below:

<u>Country of Registry</u>	<u>Number of Ships</u>
Denmark	351
Finland	184
France	416
West Germany	590
Greece	2,379
Italy	603
Netherlands	443
Norway	978
Spain	479
Sweden	286
United Kingdom	<u>1,377</u>
Total, 11 West European Countries	8,086

With its 8,086 ships, these 11 countries of Western Europe represent about one-third of the world merchant fleet. Thus, while the size of the U.S. merchant fleet has declined, the position of Western Europe has remained relatively strong. On average, the age of merchant ships operated by these 11 West European countries is below that for the world fleet. Overall, the data reveal a strong, large merchant fleet for the European partners of the Atlantic Alliance.

Problems in the Merchant Marine

Neither the United States nor the nations of Western Europe has reason to feel comfortable with the present state of international shipping. The United States, in particular, faces some severe problems, and there appears to be no prospect for reversing the present deterioration of the merchant marine unless changes are made in the relatively near future. It has even been suggested that unless action is taken soon, the U.S. flag merchant marine could disappear within a decade. While this is probably unlikely, the prospect of this development is unnerving and its implications for the security of the Atlantic Alliance extremely serious.

The reasons for the poor state of the United States merchant marine and the liner business in particular are multiple and complex. Among the major factors influencing the decline are: 1) poor planning that has created a worldwide excess of ship capacity over the volume of available oceanborne trade; 2) lack of U.S. government support and the absence of a clearly defined policy supported by all

government agencies; 3) Congressional apathy; 4) management practices; and 6) past labor difficulties which, while somewhat ameliorated today, have left a residue of problems.⁴

A further problem confronting both American and European merchant shipping is the intensifying competition from other fleets. This competition comes from two directions. First, there is an increasingly powerful combination of state-controlled developing country fleets - such as the pan-Arab United Arab Shipping Company - whose expansion is as much a matter of political as of commercial logic, and the Hong Kong owners who combine the advantages of cheap crews and a relative absence of labor problems with financial and operational expertise. The demands of developing country ship owners, manifested in the UNCTAD code for a 40:40:20 share-out between exporting country, importing country and cross traders, will have to be accommodated. With a potential world-wide recession that would have major repercussions for Western merchant marines, this accommodation could exacerbate the difficulties that would be encountered.

Second, the Soviet and East European merchant marine have made sizable inroads into the shipping market. While their total share of foreign shipping is not significant, their share over specific routes is another matter. For example, according to EEC estimates, Soviet ships carry 28 percent of the freight between Europe and North America across the Atlantic. Moreover, East European and Soviet ships handle 35 percent of the traffic between northern

Europe and the west coast of Latin America and more than 20 percent of that between the Mediterranean and Gulf of Mexico.⁵

Some analysts have suggested that the principle reason for expansion of the Soviet merchant marine is to secure political and military gains with little concern for the costs involved. Others argue that Moscow has been motivated for primarily economic reasons. Whatever the reason, close coordination between the Soviet merchant and Soviet navy has been a hallmark of their mutual development. The growth of the Soviet merchant marine over important commercial waters as well as its support of Soviet naval operations can only cause considerable concern among NATO logisticians faced with declining prospects for their own national fleets.

The challenge to Western merchant marines from these two quarters has important peacetime implications, making industrial democracies increasingly vulnerable to economic strangulation by the mere refusal of foreign carriers to transport their exports and imports. When placed in the context of the wartime logistics requirements of the Alliance, these trends imply even more ominous consequences.

III. The Military overlay

The peacetime flow of raw materials, semi-finished manufactures and other goods is absolutely essential if the economies of NATO members are to remain healthy and productive. As the previous section demonstrates, even in situations short of direct conflict, ensuring that flow is not necessarily an easy task for the Alliance. During a conflict in

Europe, however, the additional burden of reinforcing and resupplying combat troops on the continent is super-imposed on this already difficult task of maintaining commerce, albeit on a reduced level. In times of direct hostilities, NATO decision-makers are thus faced with the dilemma of having to perform both tasks simultaneously without a guarantee that sufficient resources exist to accomplish them both satisfactorily. But policymakers cannot concentrate on doing one job to the exclusion of the other. If both tasks are not pursued, the Alliance would be faced with failure. Balancing these demands with the resources at hand becomes a task of immense difficulty.

The argument is frequently heard that the next European conflict would be a short war, thereby reducing not only resupply requirements but also shortening the time during which NATO members would have to receive commercial imports on a wartime basis. History demonstrates, however, that predictions of a short war have frequently been incorrect. They were wrong prior to World War I and again before World War II. This time such predictions might well be correct, but it would be imprudent to toss history aside. No wise planner would rest his case on such a track record. The proponents of the short-war scenario are taking the easy way out. The Alliance cannot risk being caught short. To plan on a short war- to pre-position only limited stocks, for example - would make it all too easy for a potential enemy unconstrained by the demands of domestic politics to so build up his stocks

that he could wage war well after those of the Alliance have been depleted. Alliance logisticians, therefore, must consider their problems in the context of a protracted conflict. An examination of NATO's logistical needs for such a conflict illustrates the dimensions of the problem.

The Need for Reinforcement Resupply

Assuming adequate warning, in the phase prior to actual fighting in Europe, the first logistical requirement will be to reinforce troops already stationed in Europe. Officially, more than 1½ million men - or about 80 brigades - will have to be transported to the European continent from North America and the United Kingdom. ⁶In reality, this figure misrepresents the actual requirement since it assumes that all spaces in the reinforcing divisions - active, reserve, and National Guard - are filled, an assumption that clearly would be inaccurate. The airlift capacity of the Atlantic Alliance is capable of delivering some of this personnel as well as some of their light equipment. If these troops are not brought to Europe prior to the outbreak of hostilities, however, the task is considerably more difficult, as the air bridge created would need protection in an air combat environment of considerable complexity. Some analysts have raised questions about the adequacy of NATO's air defenses, and those of the United Kingdom in particular. While Great Britain has recently announced several steps to improve its air defenses, the fact remains that ensuing reinforcement of troops stationed in Europe will require NATO decisionmakers to take

the step prior to the outbreak of hostilities.

While NATO's current and planned airlift capacity will be adequate for transporting personnel, it is totally unrealistic to expect that the necessary supplies for troops fighting in Europe can be brought by air. On the contrary, by reason of sheer volume, the bulk of equipment, weapons ammunition and other supplies will have to be delivered by sea. This holds true for their initial requirements as well as any ongoing resupply pipeline. In both the Korean and Vietnam conflicts, sealift accounted for more than 90% of the logistical supplies, and there is no reason to assume that this figure would change drastically for a European conflict.⁷

Rough estimates suggest that more than 10 million tons of cargo and over 110 million barrels of liquid would have to be transported across the Atlantic in the first 180 days of conflict to support North American troops now in Europe and their reinforcements. These figures do not identify the enormity of the task confronting NATO, however, since they do not include resupply requirements for European forces which will also need supplies and military equipment, for example, ASW torpedoes from North America. Nor do these figures include civilian needs in Europe. Even if these needs are drastically reduced during wartime - perhaps to as much as one-half the peacetime rate - a functioning industrial and economic base supporting NATO's war effort demands substantial sea-borne imports, let alone the basic human needs for subsistence of the civilian population.

Translated into logistical terms NATO would require between one and two dozen dispositions at sea, each composed of some 70 merchant bottoms. Can the Alliance meet this requirement? Are enough vessels available? Will their deliveries be timely? At the present time, the answer to each of these questions is unclear.

In order to fulfill its logistical responsibilities, the NATO Alliance requires between approximately 2500 and 6000 merchant bottoms, depending on the mix of ships. If the best ships are available, the lower number would be sufficient. In this regard, the availability of Ro/Ro would be extremely advantageous although, even in the best of cases, there are too few in number. Driving heavy armor onto these ships, for example, rather than lifting them into the hold of traditional vessels would save valuable time and manpower.

At the present time, NATO nations possess about 10,000 merchant bottoms to fulfill this requirement. While this number appears adequate, nevertheless there is no assurance that NATO will meet its defined task in a time of crisis. There are several reasons. First, not all of the vessels will be available. About 25 percent of the overall number of ships fly flags of convenience. In the case of the United States, many of the vessels flying flags of convenience are theoretically available to American military planners in times of war as part of the Effective United States Controlled (EUSC) fleet. However, the efficacy of the EUSC system rests on assumptions that have increasingly been the object

of doubt, namely that no valid objection to a U.S. attempt to requisition the ships could be raised by the vessels' countries of registry and that vessel owners would cooperate readily and exercise control of their vessels in U.S. interests and that the vessels would be adequately manned. None of these is assured. Moreover, with respect to flag of convenience vessels of other NATO countries, their availability has not been included in NATO planning, and Western Europe's ability to locate the necessary commercial bottoms is suspect. The prospect of another exercise to develop a NATO-agreed worldwide shipping plot, as was done in June 1977 with the so-called "World Fleet Positions Report," is not promising; clearance policy has not yet been agreed.

This leads to a second reason for concern about the adequate availability of merchant shipping, that is, the absence of sufficient planning within the Alliance. Today, NATO has not yet achieved specific agreement on how to secure the modern ships from European NATO members needed to supplement U.S. shipping resources. NATO nations apparently want to retain control for their national military and civilian needs. There is, therefore, no NATO-wide plan for securing sufficient numbers of vessels to meet civilian support needs as well as military requirements. Pledges by shipowners to make their vessels available, while valuable, are not enough; ship operators must also be brought into the planning effort.

A third reason for concern about adequate numbers of commercial ships relates to the question of losses to hostile

action during combat. Losses are impossible to estimate with any precision; estimates anywhere from as little as 3% to 25% or even 50%. ⁸It is on record, however, that during the Allies' resupply of Malta during World War II, in the most critical nine-month period, losses ran as high as two-thirds of the tonnage passing Gibraltar. Perhaps it is unreasonable to expect losses to run as high during a resupply operation in Europe, but, especially in the early phases of a conflict, staggering losses should be anticipated. Well over a third and probably more of the merchant ships at sea would be destroyed or prevented from delivering their cargoes on the day the shooting started. Reasonable estimates suggest 15-30% losses during the first month of a conflict with the average rate of losses declining over a protracted period.

As a consequence of these factors, NATO planners cannot be sure of a sufficient number of merchant vessels to meet Alliance resupply needs once the shooting begins. If there is sufficient warning time, actions can be taken to secure the proper number and types of vessels. However, this would again require decision-makers in NATO capitals to commit themselves to a course of action that many might feel is provocative, dangerous, and, perhaps, unnecessary.

Some analysts have argued that in order to compensate for a potential inadequacy in merchant ships numbers, faster vessels be built in order to reduce transit time. Their argument ignores that fact that maritime transport is only

one segment of the logistics pipeline. The "wet time" in the delivery process, the time in which the supplies are aboard ship, is about one-third of the total transit time between the point of production in North America and the point of use in Europe. Roughly, one-third of the time is also directed toward moving the goods to American ports and the final third in the journey from the port of destination to the point of use. In many respects, therefore, a controlling factor determining the speed of logistics deliveries is the land speed of American trains and European lorries. In the American case, the "planning-average" speed of a train is less than 20 miles per hour. Moreover, movement of military equipment such as armor by rail requires special cars, the availability of which must also be considered when determining the present state of Alliance logistics.

When considering improvements in the Alliance logistics system, therefore, it will also be necessary to address problems associated with the land dimensions of that system. The horrendous state of the roadbed for American railroads, for example, could be vastly improved so that more rapid movement of goods to East Coast and Gulf ports could be achieved. But to make improvements of this kind requires funds that would have to be redirected from other logistics improvements that should also be made. NATO decision-makers, therefore, must make a choice, assuming that there is any willingness to improve Alliance logistics arrangements. It is a sad commentary that as a result of inattention to logistics matters the available information is inadequate as a basis on which those

decision-makers can make a reasoned choice. Although that information is improving, it falls far short of Alliance needs.

While improving the land-based components of the NATO logistics system is important, the increasing vulnerability of its maritime component demands that it receive special attention. The problems in this regard go beyond those related to adequate numbers outlined earlier to some very fundamental difficulties of which two stand out. One is the declining state of the merchant marine and shipbuilding industries of industrial democracies outlined earlier. The second is the disturbing trend in the maritime balance of forces. Both trends must be reversed if the NATO Alliance is to be provided with an adequate logistics capability.

The Growth of the Soviet Navy and Potential Logistics Disruption

The growth of the Soviet Navy since the end of World War II has been widely chronicled. Moscow has spent a national fortune to acquire its present naval capabilities, devoting to their acquisition significant numbers of skilled manpower, massive industrial capacity and enormous quantities of raw materials. Through this effort, the Soviet Navy has been transformed from a force limited to providing coastal protection to a navy capable of sustaining operations anywhere in the world. The Soviet Union, for example, has assembled the world's largest submarine force for both strategic and general purposes. By the late 1980s the Soviets will have almost 100 nuclear attack submarines, many of which could be

used against Allied merchant ships and combatants. The latest Soviet submarine development, the recently publicized Alpha-class, with high speed and deep diving capability, adds to the problem. In addition, Moscow has the world's largest mine warfare fleet, which, when combined with ocean mines deployed by air, will be able to cover all the northern European sealanes and extend deep into the central Atlantic basin. In recent years, the Soviet Navy has also acquired a modest capacity to take tactical aviation to sea through the introduction of the Kiev and Minsk ASW carriers with their Forger V/STOL aircraft. Furthermore, the Soviet Navy has in service modern surface combatants - the Kara-class cruisers, for example - with the largest inventory of deployed antiship missiles. Finally the Soviets' unequalled fleet of intelligence-gathering vessels and its unmatched shipbuilding capacity cannot be overlooked.

The Soviet Navy is not without its weaknesses, including a limited capacity for open ocean ASW and underway replenishment. Geographic factors also pose possible constraints.⁹ These weaknesses notwithstanding, the Soviet Navy has acquired a global capacity and it has done so for a reason, although that reason has been the subject of endless debate among naval analysts. Some have argued, for example, that in addition to the strategic mission, the build-up is aimed at performing a home sea denial mission and designed for high intensity, short-term conflict.¹⁰ Others would contend that it is the consequence of a conscious decision to develop a

global naval capability and pose a credible challenge to the traditional maritime powers.

Whatever the reason, the capability exists and it is the capability with which NATO logisticians and military planners must be concerned. The Soviet achievement has occurred at a time when there is growing evidence of heightened Soviet interest in Western sealanes of communication. A comparison of the 1971 and 1976 editions of the Soviet Joint Military Encyclopedia, for example, reveals that disruption of sealanes of communication rose in the list of naval priorities from last place to second, immediately following the strategic mission. More telling perhaps is the evidence provided by Soviet naval exercises. In OKEAN 75, the largest exercise the Soviet Navy has ever conducted, NATO reinforcement efforts along important SLOCs were simulated and their interdiction thoroughly practiced.

Although they might disagree about its specific position in the hierarchy of Soviet naval priorities, most Western naval analysts agree that SLOC interdiction will be an important mission of the Soviet Navy in times of conflict. According to a study by the Atlantic Council, the importance of the mission has fluctuated over time, but in recent years, "the possibility of protracted nuclear conflict or of conventional war has increased the relative importance of this mission."¹¹ At the very least Soviet naval units could engage in anti-SLOC actions in order to tie down Western ASW forces, thereby diverting them from other activities. This mission

would clearly include minelaying as well as direct attacks as all Soviet submarines are equipped with mines as well as torpedoes.¹² Moreover it must also be stressed that the interdiction mission is viewed by Soviet naval planners in its broadest sense to include destruction of terminal facilities and distribution networks by air or missile attack, mining of ports or assembly areas and attacks on all types of escort forces.¹³ In an effort to secure quick results, the Soviets may thus concentrate in the initial phases of a conflict on denying Western shipping access to European ports and destroying intra-theater commerce rather than Atlantic-wide sealanes.

The Soviet naval buildup poses a new challenge to traditional American superiority at sea and the ability of the entire Atlantic Alliance to meet its logistics requirements. In the past, the Soviet Union seemingly accepted the fact of American naval preponderance. The recent trend toward Soviet military equivalence or even preponderance across the entire spectrum of military capabilities, however, is generating a context in which U.S. claims for necessary naval superiority will no longer be considered legitimate. The Soviet Union will be in a position to assert a "right" to develop naval forces comparable to, or even surpassing, those of the United States. Washington, indeed the entire Atlantic Alliance, cannot allow that to happen.

Yet, the trend among Western navies, and especially the U.S. Navy, appears to be in the opposite direction. With the

phasing out of Ark Royal last year, for example, the British Navy has completely eliminated its large carrier battle groups (they had four immediately after World War II). The United States has reduced the number of its carriers to half the Vietnam conflict level from twenty-four to twelve. In fact, there have been decreases in all categories of ships within the U.S. Navy, most notably in destroyers and escorts - the types that would probably be most useful in defense of Alliance sealanes.¹⁴

Planned U.S. naval ship construction is also inadequate. The total programmed size of the U.S. Navy for the mid-1980s is now only 522 ships instead of 570 previously planned by the Carter Administration. If the present building rate is projected beyond the current five year program, taking into account decreases in the force resulting from the de-commissioning of obsolete vessels, the total "steady state" of U.S. naval combatant forces through the 1980s would actually be under 400 vessels, not 522 ships. To support a force level of 522 ships would require a higher rate of construction than is currently planned. It would require the construction of almost 100 ships during the next five years; the present program calls for under 70 ships to be built during this period.

The shipbuilding outlook may turn out to be even worse than present projections suggest. It has been reported, for example, that in late May 1979 the Carter Administration ordered a reduction in the five year naval shipbuilding

program to only about 30 new vessels through 1985.¹⁵ During the recent SALT hearing calls were made to increase U.S. defense spending. Maybe this will help and maybe it will not, but there is no reason to be sanguine about the prospects. Most likely, the Executive Branch is considering as many as three naval shipbuilding options for the next five years. In commenting on this report, the OMB spokesman hedged, pointing out that budget requests so far employ a five-year program of more than 60 ships. But OMB admits that the Defense Department is currently reviewing the 1981 program, raising the possibility that Congress may be asked to support a smaller program than the present 67 five-year total.

Commitments to NATO call for assigning the Atlantic theater over 250 ships leaving only about 100 ships, mostly non-combatants, for the Pacific. This prospect would undercut the present intentions of the U.S. Navy regarding redeploying ships from the Pacific to the Atlantic to support NATO should war threaten. A small force of only 100 naval ships in the Pacific would be totally inadequate to perform required missions in the Far East, Indian Ocean and Pacific Ocean, including the defense of Japan. It cannot be forgotten that the United States also imports vast quantities of materials through Pacific ports and, in addition to the military tasks that units in the Pacific would have to perform, they would also have to protect commerce transiting Pacific sealanes. If such an erosion of capability outside of the NATO areas occurred, it could also have very grave

foreign policy consequences including the prospect that a relatively undefended Japan and vulnerable PRC would tilt politically and economically towards the USSR.

Clearly, the "swing-concept," that is, redeploying combatants, auxiliaries and support ships from the Pacific to the Atlantic, is untenable. To expect a war between NATO and the Warsaw Pact to remain confined to the Atlantic is totally unrealistic. Robbing Peter to pay Paul will only make Peter too poor to perform his required tasks, which he inevitably will have to do. Therefore, the building program must be re-thought.

What Can Be Done?

The logistics system of the Alliance today stands in danger of collapsing under the strain imposed during a conflict in Europe. The situation, however, is not irreversible if immediate steps are taken to implement reform. Underlying all the reforms, however, must be a fundamental psychological shift in Alliance perceptions of logistics. NATO cannot afford to relegate logistics to a secondary importance, emphasizing instead more glamorous issues. The logistics system of the Alliance is the firehose on which NATO firemen in Europe will be relying when confronted with the flames of a continental conflict. All Alliance members must recognize the importance of providing a constant stream through that hose if the fire is to be put out without consuming all who are involved. A psychological reorientation, therefore, must be the initial step.

Once this is accomplished, other actions should immediately follow. In order for the Alliance to improve simultaneously, both the merchant and naval dimensions of the logistics system, the following actions are offered for consideration:

First, Alliance members must rapidly develop a program for the commitment of increased numbers of merchant ships of member nations to common, agreed support functions. Having the plan is not enough, however, it must also be exercised.

Second, NATO must develop more effective procedures to monitor position information and the status of merchant vessels as well as to ensure Alliance wide control of essential shipping, including flags of convenience ships and even Soviet and East European vessels that may be in friendly ports or waters in times of crisis.

Third, greater coordination must be achieved between the relevant companies and government organizations for integrating military requirements into merchant vessels. Providing merchant vessels with the capacity for being equipped with some form of armaments, for example, or designing merchant vessels with military requirements could be the beginning of this process, but it will require consultation and close cooperation among groups which, in the past, have frequently shown little inclination to come together.

Fourth, NATO needs to increase significantly the development and construction of naval and air forces for the protection of merchant shipping. At present, adequate numbers simply do not exist.

Fifth, alternative measures must be adopted to reduce the potential losses associated with the reinforcement and resupply of continental Europe. This could be done in several ways, including building up pre-positioned stocks in Europe, at least to a 90-day level, and holding more frequent redeployment exercises as part of normal training requirements.

Sixth, all NATO members must take a more realistic view of the fact that a NATO war would not be limited to Europe but extend globally. Adequate sea and air capability must be made available to defend friends and allies, vital sources of raw material, including oil, and essential sea lanes around the world. This job has yet to be done.

Unless logistical support of NATO is more effectively assured, an important element of the strategy of deterrence is lacking. An effective logistics system conveying a capability that assures NATO success in a potential conflict would surely make any potential adversary hesitant to initiate hostilities. In its absence, temptations increase. Moreover, if decision-makers in the United States were to conclude that the Soviets cannot be effectively deterred by conventional forces because of weaknesses in NATO logistic support, pressures might be expected for a major review of the strategy itself. Failure of NATO to solve the logistic problem could also lead to bilateral and multilateral deals and arrangements outside the NATO framework. Such a trend can only further weaken the Alliance. To the extent individual nations of NATO question the credibility of resupply

and reinforcement, they may seek to make their own accommodations with the Soviet Union in a future crisis. This is the worst of all situations: it would signal the death of NATO and in time the loss of freedom in much of Europe.

NOTES

1. These figures are taken from Paul H. Nitze and Leonard Sullivan, Jr., Securing the Seas (Boulder: Westview Press, 1979), pp. 132-133.
2. Data provided by the Maritime Administration.
3. "PanLibHon" refers to vessels operating under the Panamanian, Liberian or Honduran flags.
4. An excellent discussion of these factors can be found in "An Appraisal of the United States Flag Liner Industry" prepared by Admiral Holloway for the Council of American Flag Ship Operators, December 1978.
5. Reported in the Los Angeles Times, September 7, 1978.
6. See Admiral Isaac Kidd's testimony on "Sealift Capabilities and Merchant Ship Attrition" before the Subcommittee on Merchant Marine of the House Committee on Merchant Marine and Fisheries, September 20, 1978, p. 141. Hereafter referred to as "Testimony."
7. See Testimony, p. 156.
8. Testimony.
9. See Alvin J. Cottrell and Thomas H. Moorer, "Seapower and NATO", a paper prepared for a CSIS NATO conference in Brussels, September 3, 1979.
10. See, for example, James A. Nathan and James K. Oliver, "The Changing Context of American Seapower," Naval War College Review (February 1979), pp. 10-12
11. Securing the Seas, p. 86.

12. Ibid., p. 88.
13. Michael McGwire, "Naval Power and Soviet Global Strategy," International Security (Spring 1979), p. 174.
14. See Securing the Seas, pp. 170-171.
15. Business Week, July 16, 1979, p.101.

NAVAL FORCES AND NATO STRATEGY

Clearly, naval forces play a larger role in NATO than the logistic support function considered in the previous Chapter. This section evaluates that broader role, focussing on U.S. naval strategy and the barrenness of a strategy premised on localized conflict in the event of a NATO confrontation with the Warsaw Pact. A global outlook, both within the United States and NATO, is required, as well as a naval strategy to operationalize that global perspective.

NAVAL FORCES AND NATO STRATEGY

When considering the role of seapower and NATO, it is important to bear in mind that in NATO planning the practice has been to view a NATO conflict as primarily one confined to the North Atlantic region when, in fact, a NATO war should be treated as a global military conflict, at least as far as the United States and the Soviet Union are concerned. This tendency to view a NATO conflict as a limited regional conflict results in part from a deficiency in the U.S. policymaking process, particularly noticeable in the Carter administration, in which there has been a compartmentalized approach to foreign and military policy. This is because the United States lacks a coherent global strategy for the first time since the end of World War II. Each policy problem is treated in isolation from the global strategic environment. This has been especially true of U.S. strategy vis-a-vis NATO.

To assess the role of seapower and NATO only in terms of a North Atlantic conflict would certainly limit naval requirements for fighting such a war. For example, if the role of seapower in a conflict on NATO's central front is viewed primarily in terms of holding the flanks and resupplying the central front forces of the Alliance - i.e., an Atlantic sea lines of communication (SLOC) mission along with neutralization of Soviet naval forces in the North Atlantic and Mediterranean - then the role of naval forces in NATO is indeed an

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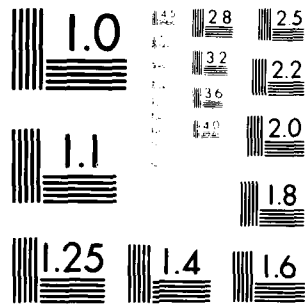
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important but more manageable requirement within current force levels. However, if allied naval activity is confined merely to containing Soviet naval forces in the North Atlantic and contiguous seas while replenishing the alliance in Western Europe, on the premise that hostilities would not extend beyond the central front, then the United States and its allies, have adequate naval power for the job only by accepting two vital assumptions. First, that vital antisubmarine force deficiencies can be corrected through additional land and sea based antisubmarine aircraft and attack submarines; and, second, that no limits are placed on allied ability to concentrate all naval forces in the NATO area. If, however, a NATO war becomes a world war, the alliance naval capabilities are much less adequate. Furthermore, to conceive of a war limited to NATO when both superpowers are deployed across the globe seems a very questionable premise. For the alliance to defeat a determined foe with large manpower and material resources as well as interior lines of communication, the ability to engage the Soviet/Warsaw Pact forces on a second front is a prerequisite.

It is reasonable to argue that only by putting substantial pressure on the Soviet Union in the Pacific theater could initial conventional NATO force deficiencies in Central Europe be compensated for until the forces could be resupplied. The pressure that could be applied initially by the alliance is largely confined to naval, marine, and air power. To be effective in pinning down equivalent Soviet manpower, however, pressure would have to be applied in the form of substantial

land forces that, realistically, could only be supplied on a timely basis by the People's Republic of China (PRC) along the mainland Sino-Soviet border.

The need to apply pressure on the Soviet Union in the Pacific theater would require the United States to decide to break away from the so-called "swing" strategy that envisages the shift of naval-air forces from the Pacific to help in a NATO conflict on the western front. To apply pressure in the Pacific might require the United States either to attempt to contain the Soviets in their key Pacific bases - i.e., Vladivostok and Petropavlovsk - or to attack these bases at the outset. The destruction of these major Soviet bases would insure U.S. control of the Pacific SLOCs. Thus the strategy of maintaining pressure on the Soviets in the Pacific involves maintaining sufficient naval power there to provide both for an offensive capability against Soviet military bases in the area and for the psychological support of Japan and, particularly, the territories within easy range of Soviet naval and air power.

The long Sino-Soviet estrangement is currently responsible for pinning down almost one fourth of the Soviet's total military capabilities and has prompted the observation in some quarters that the PRC can be considered an honorary member of the NATO alliance in that it contributes as much to the defense of NATO's central front by diverting Soviet forces as any other member, except the Federal Republic of Germany (FRG) and the United States. Should a chance exist, however, for a Soviet-PRC detente, it could be enhanced by signs that the

United States was not prepared to maintain sizeable military forces in the Pacific. Thus a strategy that entails a major draw down of U.S. naval power there in the event of a NATO conflict could well be viewed as confirmation of our lack of resolve.

It should be remembered that a misreading of our intentions and our resolve was directly responsible for the North Korean aggression against South Korea. In that case we announced the limits of our defense perimeter and the Communist bloc attacked that which they believed would remain undefended. It is equally perilous to speak of defending Western Europe at the expense of the Pacific powers since the acceptance of such a policy - even if only for strategic logistic planning purposes - could set in motion diplomatic moves by potential friends or allies that could more than compensate the Soviets for any force the alliance could bring to bear along the central front.

One may assume that the Chinese are equally concerned. For example, the Soviets now boast their first carrier in the Pacific. Although it is no match for the large-deck carriers of the American navy, it nonetheless has the capacity to take tactical aviation to sea in the form of the new Forger V/STOL aircraft. The deployment of this carrier and four accompanying warships from European Russia to Soviet Far Eastern naval bases was completed in the summer of 1979. As this force passed up the east Asian coast, it was monitored by the Japanese and Chinese alike.

The character of the other ships is almost as significant as that of the carrier, the Minsk, itself, for, included in the group, was the new, large, and very capable Soviet amphibious ship, the Ivan Rogov. It should be remembered that the amphibious force is one of the fastest growing segments of the Soviet fleet. The other ships comprised two of the newest missile cruisers, Kara class, and a new, large, underway replenishment ship, the Boris Butoma. It is a fair assumption that the significance of this particular movement of naval strength to the Soviet Pacific fleet is that the Soviet Navy is being structured and deployed to deny free use of any of the world's oceans to nations of the West. The implications for NATO are necessarily profound.

The maintenance of the current levels of U.S. naval power in the Pacific could serve to inhibit any possibility of a "swing" strategy on the part of the Soviets that would enable them to redeploy forces, especially air and ground forces, from the Sino-Soviet border where they are now in position.

It is the PRC's contribution to NATO that has in large measure been responsible for the declared change of U.S. strategy from what was called a "two and a half" war strategy to one now labeled a "one and one half" war strategy. In essence, the "one and one half" war strategy envisages the United States fighting a major war in the East or the West, but not both simultaneously. Without a very strong U.S. naval presence in the Pacific, however, the PRC's willingness to accept the risks of confrontation with the Soviet Union could

be diminished. This is why it is so vital for the United States to maintain intact its present security arrangements with Japan and the Philippines and why it is a serious mistake even to consider the withdrawal of U.S. from Korea. To tamper with any part of these arrangements could lead to an adverse security perception on the part of American friends and allies and damage the possibility of a global option as part of a broadened defense concept for NATO. Thus the tendency to compartmentalize U.S. policy in the Pacific by treating Western Pacific problems as country problems, rather than as matters of global strategy, could be disastrous to NATO as well as to the stability of Asia.

The presence of sizeable U.S. naval forces in the Pacific could encourage the Chinese to confront the Soviets along their borders and perhaps deter a NATO war, or, failing that, prevent the Soviets from applying their full capabilities to a war in the North Atlantic area. In any case, the Soviets would have to assess the PRC's probable actions before considering an attack on Europe. Chinese resolve might also depend on whether they could expect to be resupplied by U.S. maritime forces.

It is often argued in NATO circles, especially by its European members, that the North Atlantic area must be given priority in the commitment of military forces to the region. This is true insofar as NATO forces per se are concerned, but it is not necessarily true in regard to national forces not committed to NATO, particularly those of the United States deployed in Asian waters. It can just as easily be argued that this priority and commitment is almost equally fulfilled by

maintaining a high level maritime fighting capability in the Western Pacific or the Indian Ocean. NATO forces on Europe's central front have been numerically inferior to the Warsaw Pact forces since the inception of the treaty. Thus, if the conventional redressment of NATO forces in Central Europe is not to be achieved - and this seems to be the case - then the regional inferiority of NATO forces must be offset by confronting the Warsaw Pact, and especially the Soviets, with a global strategy which will spread them thinly, preventing their concentration in the North Atlantic region. If a concentration of Warsaw Pact forces is allowed and if they are permitted to choose the regional conflict venue, they will surely gain a decisive advantage. Soviet chances of emerging victorious from a global conflict are much less certain.

Most powerful states have feared the possibility of fighting wars on two fronts. Germany has been in this position twice in this century. Indeed, the requirement to engage hostile forces on its eastern and western fronts simultaneously was largely responsible for Germany's defeat in two world wars. In World War II, Germany actually made a treaty with the Soviet Union so that it could engage the West without worrying about the threat of an attack from the East. Now that West Germany is in alliance with NATO, the center of gravity has shifted to Eastern Europe and the Soviet Union, and the Soviet/Warsaw Pact forces have replaced Germany as the antagonist. Now it is the Soviets who must be concerned about a two-front war against the PRC which will have at least naval and air support from the

United States and others in the Pacific. If we decide to relieve them of this strategic dilemma as we plot the defense of the NATO region, we shall be removing one of the greatest obstacles to their potential success in the West.

The swing strategy, which made sense in earlier times when the United States had over 20 carriers, makes little sense today when we have only 12 carrier groups. Moving these forces to the Atlantic would concede the Pacific to the Soviets and strengthen their ability to concentrate on the North Atlantic region. We should remember, too, that none of these carriers could thus have to go around South America, raising profound questions about the value of the strategy. If the war's duration were less than 40 days, these ships would not arrive in time to participate. At the same time, their redeployment would have weakened the security situation for the West throughout the Pacific and Indian Oceans. In short, despite the objections to dropping this swing strategy it can be credibly argued that NATO defense is as crucially related to U.S. maritime policy decisions in the Pacific and Indian Oceans as it is to plans for fighting on the central front and its flanks in the north and south of Europe.

In any event, if the United States and its allies conduct an aggressive global strategy, we will emerge in a much better and, possibly, superior negotiatory position if we treat the threat to NATO as a global confrontation. The global approach to NATO's defense has been coolly received in Europe largely because of the parochial attitudes taken in European circles toward the defense of NATO's central front and flanks. Typical

of this compartmentalized and narrow approach has been the statement made by the FRG's Admiral Rolf Steinhaus. Writing about NATO's northern flank, he has stated that, "...the Nato alliance will have to continue to reckon with the acute threat to its vital sealines of communications across the Atlantic. In this respect, strengthening the Second Fleet by redeployment of units - for instance from the Pacific Fleet - would be an urgent requirement. Permanent deployment of a carrier group around Iceland would be the best solution."

It is inconceivable that the United States could consider a battle for Western Europe in which U.S. interests and all other NATO interests east of Suez would be left unguarded while fighting only on the central front and its flanks. Such a strategy, whatever it might achieve on the ground in Central Europe, would surely bring about the defeat of the NATO countries. Loss of Middle East oil alone could immobilize NATO ground and air forces. The deployment of sizeable naval forces in the Asian area to help maintain stability in the vital area of the Indian and Pacific basins while confronting the Soviets in Europe is as vital to NATO as it is the fighting in Europe itself.

All too often overlooked in current reviews of NATO strategy are two profound changes that have taken place in recent decades. The first, of course, is the dramatic reduction in the size of the U.S. Navy that has occurred since the end of the Vietnam War. Shrunken from over 900 ships in 1965 to less than 450 today, the Navy is clearly incapable of meeting the

commitments it once could meet. Unfortunately, those commitments have not diminished in tandem with the decline in American naval strength.

The second change lies in the even greater reduction in the strength of the Royal Navy. The last British aircraft carrier was laid up in 1978, and the Royal Navy's amphibious capability is virtually nonexistent. These changes in the strength of the British fleet were accelerated following the Labour government's decision to withdraw forces east of Suez before the end of 1971. Insofar as the United States and NATO are concerned, this diminution of deployed British sea power gives the U.S. Navy the responsibility for protecting the sea-lanes and waters of the Pacific and Indian Oceans. Thus, the loss of American strength, when coupled with that of the Royal Navy, results in a geometric reduction in Western capability to defend its vital maritime interests at the very time when the Soviet Union is actively engaged in building its own capability to control the sea-lanes of the world. Moreover, continued expansion of the Soviet amphibious capability will add an entirely new dimension to the traditional Soviet strategy of sea denial: the ability to project Soviet forces ashore at considerable distances from the Soviet homeland.

As pointed out in a valuable Atlantic Council study, "...many analysts assume that the naval aspects of a 'NATO war' could be confined to the North Atlantic and the Mediterranean..."² The present swing strategy calls for shifting most naval capabilities of the U.S. Pacific fleet to the Atlantic in the event of a NATO conflict. It is quite conceivable

that the forces earmarked for this purpose, i.e., carrier task forces, would make a greater contribution to protecting the Indian Ocean and Pacific SLOCs. The distances between land installations in Asia are vast, and land-based air capability to assist in sea-lane defense is more limited. As indicated previously, the swing of forces would require up to as much as 40 days - a period during which these forces would be of little value either in the Pacific or in the Atlantic. The more appropriate location for carrier task forces may be in the protection of the SLOCs east of Suez where such forces are less vulnerable and more effective than in the Atlantic.³

In fact, because of this tendency to assume a NATO war would not be a global war, there has been an over-emphasis on committing seapower to the North Atlantic area. This has been of great concern particularly to the PRC and Japan, who fear that forces will be drawn down from the Pacific area to meet U.S. NATO requirements, and in the Indian Ocean-Persian Gulf region, where there has been much talk of creating a new U.S. fleet to counter threats to our oil access. If more forces are needed to protect our interests in the Indian Ocean, some have argued that the Mediterranean might be considered a likely source of additional naval forces. Rather than specify in advance the region from which the forces would be drawn, it may be better to say merely that the forces required would come from those already deployed and most readily available. If we conceive of a NATO war in a global strategic framework, it becomes obvious that such forces could not be pulled from the Pacific without extremely adverse

consequences.

In order to maintain stability in the Pacific, the present naval strength should be maintained, if not enhanced. NATO is only one, albeit a vital part, of a global confrontation and indeed NATO is thus far the safest area in the world in terms of the threat of war. The probability of global crisis is much greater outside NATO, in the area east of Suez.

The events of the last several years have graphically demonstrated a new objective critical to U.S. and NATO security: to prevent the Soviet Union from creating an environment in the Middle East, the Persian Gulf, and the Horn of Africa that would deny oil to the United States, NATO, and Japan, and to deter the Soviet Union from any overt action against either Iran or Saudi Arabia. As stated by Secretary of Defense Harold Brown before the Los Angeles World Affairs Council:

Because the area is the world's greatest source of oil, the Middle East and the Persian Gulf cannot be separated from our security and that of NATO and our allies in Asia.

We intend to safeguard production of oil and its transportation to consumer nations without interference from hostile powers.

There are several reasons why the Soviet Union might wish to influence the flow of oil to the West. First, the Persian Gulf is vital to the United States, Europe, and Japan. What better way to achieve a long sought-after leverage over the West than by gaining a degree of control over a vital strategic and economic choke point? Second, by the mid-to-

late 1980s, the Soviet Union itself might need increased access to Persian Gulf oil to satisfy its own energy requirements.

There is a consensus in the West that an uninterrupted flow of oil from the Persian Gulf over the next couple of decades is critical to the well-being of most Western nations. Interruption of this flow, particularly if prolonged, would have a debilitating effect during peacetime; if it occurred during a major conflict in Europe, it would be devastating. There is also now a consensus, reinforced most recently by the Communist coup in Afghanistan and subsequent Soviet intervention in support of the Taraki regime, that the Soviet Union is determined to increase its influence and presence in the Middle East, the Persian Gulf, and the Horn of Africa. Oil from the Gulf could, of course, be denied to the West as a result of destruction of the oil fields or through a takeover of the countries littoral to the Gulf. However, the disruption of the flow of oil as a result of direct intervention by the Soviets or their proxies is far less likely than as a result of Soviet coercion, encouraging and supporting those elements aimed at destroying the pro-Western orientation of the Arabian Peninsula-Persian Gulf region. An increase the Soviet presence in the region, coupled with an increase in their military capability to intervene and the West's failure to deter them, creates an environment in which coercion is likely.

That the defense of NATO extends beyond NATO's treaty boundaries has always been true, but never more than now in view of increased Western dependence on overseas raw materials

and the remarkably expanded outreach of Soviet military power, especially naval and air. Not only is this true in terms of military strategy, in relation to the vital oil resources from the Persian Gulf on which the NATO countries depend. Thus, 30 years after the implementation of the NATO pact, the alliance does not have to be defeated on the central front; it can be defeated by failure to insure political stability in the Persian Gulf. The problem in the Gulf is less one of countering Soviet threats to existing regimes, but rather one of preventing the breakdown of political stability, which would almost automatically lessen Western access to the region's oil resources. The Soviets would gain by seeing the oil denied or limited to the NATO countries - enabling the Soviets to exploit the ensuing economic chaos to bring about a further shift in the geopolitical balance against the West.

The NATO boundaries were drawn at the Tropic of Cancer to assure other NATO members that they would not have to become involved in U.S., British and Portuguese commitments south of that line and also because if the line had been drawn further north, it would have left part of Florida outside of NATO. (It has also been suggested that the United States did not want the line drawn farther south because it wanted to exclude Europe from the area covered by the Monroe Doctrine.) The importance of the Indian Ocean has sharply increased, however, since the treaty was implemented in 1948, and NATO is now vitally dependent on Persian Gulf oil and - to a lesser extent - on the minerals from southern Africa as

they were not in 1948 or even in 1967.

NATO is currently allowed to plan for contingencies below the Tropic of Cancer, but for political reasons, it is not allowed to maintain or exercise forces appropriate to that task. The political reasons have already been cited. The economic reasons are those involving the cost of supplying capabilities, such as the primarily naval ones south of the Tropic of Cancer. Obviously, the provision of NATO capabilities for the area south of the Tropic of Cancer line will have to be a matter of national decision for NATO members. At present only the United States and France could contribute much to such an effort. Britain might help, but her help would be extremely limited both for political and economic reasons. It has maintained almost no naval forces east of Suez since 1971. The French have consistently maintained about a dozen naval vessels in the Indian Ocean as an earnest of their stake in the stability of the region. The United States has a Middle East force of two destroyer-type vessels and a 14,000-ton amphibious command ship, which were formerly home-ported at Bahrain, but are now homeported at Norfolk, Virginia and permanently deployed to the northeast quadrant of the Indian Ocean. It has also exercised carrier and surface task forces several times a year in the Indian Ocean. France is the only European member of the alliance with enough ships to carry out its role in the NATO area and still have a fairly good capability to contribute to stability in the Indian Ocean and to the protection of the Cape route oil SLOC. The French would probably prefer such a commitment on a national basis anyway,

and they might - if their fairly large and sustained presence in the Indian Ocean over the past several years is any evidence - be willing to collaborate in the dual goal of protecting the SLOC and strengthening the stability of the countries of the region with the United States.

There has been some improvement in the NATO attitude toward the area south of the Tropic of Cancer in that NATO is now to plan for contingencies in this area, but it cannot exercise or deploy forces south of the boundary in peacetime. Such plans could only be put into effect in crisis situations with the appropriate agreement of the NATO organization. Individual members of NATO might, however, conduct exercises in the area by mutual agreement.

The United States, since the changes in the Horn of Africa, Iran, Afghanistan, and South Yemen, has begun to recognize the need to strengthen its naval presence in the area. There has been a debate over just how much of an increase would be adequate, and whether there should be a permanent force stationed in the area or merely one earmarked for rapid deployment in a crisis. Political elements in the United States are greatly apprehensive that an increase in the U.S. naval presence will provoke the Soviets and bring about an escalation of naval forces or will have an otherwise adverse political reaction on the regional rulers. The United States will at present probably opt for something less than a "Fifth Fleet," which has been the subject of considerable discussion over the past months, and instead turn to increased visits and exercises in the area. This may be inadequate. The actual

deployment of a carrier force designated as a fleet may have a more favorable psychological effect on our friends since the fleet designation would imply that we have upgraded the Indian Ocean to the status of the two other large ocean basins, the Western Pacific with its Seventh Fleet and the Mediterranean with its Sixth Fleet.

Symbols of rank are very important in terms of perceptions. This is very true in Asia and is also valid in other areas. The fact that the Persian Gulf command was once under an Army general entitled STRICOM based in Florida was mentioned even in British circles as evidence that the United States placed a low priority on the area. They believed that the command should have been placed under a high ranking admiral. Even the downgrading of CINCUSNAVEUR from four stars to three has been seen by some as a further downgrading of the Navy's role in the NATO area.

The U.S. commitment to the Persian Gulf-Indian Ocean region will be less acceptable to the rulers of littoral states if it appears to be only a token force and thus does not represent any substantial change in the U.S. commitment to the security of the region. The United States should do something to clearly escalate its symbolic commitment. It could be done by designating the force as a fleet or by creating a new command for a "permanent task" - perhaps equivalent to Task Force 60.2 in the Mediterranean that consists of eight or nine principal combatant vessels and a replenishment ship such as the Camden, Seattle, or Detroit. This force should be made

up from deployed forces, perhaps with the assistance of the French, if they are agreeable.

The swing strategy should be modified and the United States and NATO should cope with threats to the North Atlantic with available forces for the most part. Since the United States deploys the key forces, it is vital that it develop more naval forces for the defense of the region. In the meantime, the defense of the area should be based on naval forces already deployed in the Mediterranean-Atlantic regions.

The mission of seapower in the direct defense of the North Atlantic is that of protecting the SLOCs to Western Europe. The magnitude of this task is evident from the fact that sea lift will be required to transfer 12 million tons of combat equipment and well over 1000 million barrels of oil and petrol across the Atlantic. This will require the projection of naval and air forces as far north and east as possible to clear and secure the sea area between the United States and Northern Europe to carry out the resupply and reinforcement of NATO as quickly and as effectively as possible. It will require the projection of carrier forces to the Norwegian Sea region in order to counter the Soviet naval forces clustered around the Kola Peninsula.

Soviet naval forces will have to be engaged in or close to their Kola base area if there is to be any hope at all of protecting the Atlantic SLOC. If their forces are necessary for the defense of the Kola naval complex, they will not be available to attack the SLOC.

There is some dispute over the number of carriers necessary

to fight in the Kola region. Some believe that a minimum of four is necessary. However, there are only seven carriers in the North Atlantic region in peacetime. One is usually in Norfolk for repairs. Another is held for training on the U.S. east coast. Two are deployed to the Mediterranean. At best, this would leave three carriers to deploy to the Kola area. Still, even if the number of carriers were only two or three, it would be necessary to deploy them to the Norwegian Sea.

Some analysts believe that two more carriers would be required in the Mediterranean, but the Mediterranean may not require the fighting capability that is needed to deal with the potential Soviet naval-air threat from Kola - the most important Soviet naval base in the North Atlantic.

The number of carriers available for deployment to the Norwegian Sea is critical in terms of preventing the Soviets from moving naval forces from Kola to prevent NATO's reinforcement. Specialists argue that any less than four carriers would be inadequate and necessitate the adoption of fallback strategy, namely, establishing a barrier defense along the Greenland-Iceland-United Kingdom (GIUK) gap in the Atlantic.

NATO SSNs, land-based aircraft fighters and antisubmarine warfare, ASW could then be employed in that area to deny the Kola forces access to the open seas where they could attempt to interdict the NATO reinforcement effort to the south of the GIUK gap.

It is important politically as well as militarily to project naval-air forces to the Kola region because NATO defense

in central Europe will be much more difficult if the flanks should be lost. NATO forces exercise twice a year in the Norwegian Sea to plan for the defense of the area, but these exercises have an important political role as well, namely, strengthening Norway's resolve to remain in the alliance. The Soviets will certainly continue to increase their naval strength along the northern flank of NATO and thereby attempt to erode the resolve of Norway, Denmark, and Iceland to remain staunch members of NATO. The deployment of naval and air forces on the northern flank, therefore, is vital to the continued support of our Scandinavian allies.*

The U.S.-NATO naval forces must seek to deal with their North Atlantic seapower requirement from forces already available in the region, even though such forces will be hard pressed to implement current strategic concepts for the reinforcement of the alliance. The swing concept should be abandoned by confronting the Soviets with a global conflict situation that would prevent them from transferring their forces now tied down in the Pacific to the North Atlantic.

This concept of NATO defense does not envisage any new burdens for the European members of NATO, except for the possible use of naval vessels on a national basis in the Indian Ocean. What it does mean, however, is that in the future the defense of NATO should be seen as a global problem,

* For a discussion of the formula concerning the deployment of aircraft carriers, see Appendix, pp. 182-184.

and it would be a good idea for NATO to establish a study group to monitor the world situation, especially those crisis situations which affect the interest of NATO members outside the NATO area such as the Persian Gulf and Africa. NATO members would not have to make any further military or economic commitments, only keep the alliance alerted to crises which might have an important bearing on their interests.

A future NATO war of course, might not start in the NATO area at all, it might well begin in the Middle East or Asia as a conflict involving the forces of the Soviet Union and the United States. It is the U.S. and Soviet forces deployed worldwide which make any military conflict a potentially global one. For this reason it seems less than prudent to continue to plan for a NATO war as one confined only to the North Atlantic area.

APPENDIX

We come now to the question of carrier requirements. Even the most vocal critics of the expense of building and maintaining our carriers agree that there is a minimum number we must have. That number all too often comes down to what is required in each nation's area alone. Thus when a representative of a northern NATO country insists that there must be three or four carriers in the Norwegian Sea, even at the expense of the Pacific, he is really saying that the United States can get along with just three or four carriers - as long as they are all committed to the GIUK gap. More sophisticated advocates (and opponents) of the carrier are familiar, however, with the requirements formula. They are aware that our worldwide commitments can be reduced only through juggling the inputs into a mathematical formula or by changing the ground rules for the carriers' employment.

The elements of the requirements formula are based on the number of carriers that must be deployed to the Mediterranean, the Norwegian Sea, the Indian Ocean, and to the Western Pacific in support of treaty obligations or national interests. Our legitimate interests include support of NATO in the Atlantic; support of Korea, Japan, the Philippines, or Australia in the Pacific, in addition to our own far-flung borders from Alaska to Guam; and support, if necessary to ensure the flow of oil from the Persian Gulf to the Indian Ocean.

As a general rule, in peacetime this requires two carriers deployed on a continuous basis to the Mediterranean in support

of the southern flank of NATO. It requires three deployed in the Pacific to cover a distance of 8,000 miles from Japan to the Persian Gulf - starting at a point that is 4,500 nautical miles from our west coast ports. In a crisis situation where NATO is primarily involved, an additional three or four carriers would have to be immediately available to the U.S. Second Fleet to cover the GIUK gap. These carriers would have to be deployed without any draw down on the two carriers allocated to protect NATO's southern flank.

It is not intended here to argue that only by keeping two carriers operating in the Mediterranean itself can we defend the southern flank of NATO. Indeed there are strong arguments in favor of withdrawing one or both from time to time in random fashion. Any carrier tactician will agree that the North Atlantic is a more secure environment for its operations. The point is that these carriers must be deployed to at least within easy reach of targets in the south for their power projection role to be credible in their reaction time to our NATO partners and allies along the Mediterranean littoral.

The reasons for having three carriers deployed simultaneously to the Western Pacific or Indian Ocean in a NATO contingency have already been outlined. Under such circumstances the number of carriers fully ready and deployed would increase from the normal peacetime number of five to eight or nine.

The elements of the formula itself include the number of months they must remain on station during a deployment; the average time devoted by the carrier to going to and from

its deployed station; the time required for retraining its crew and airwing and in-port upkeep at home; and the segment of time that must be allocated to a major overhaul in each cycle. The last item is abstruse, but understanding it is vital to an appreciation of total requirements. It means that after three or four years of continuous operation, a complex system such as a carrier must undergo a general overhaul. It will then be torn apart to such a degree that its use in an operational or combat role cannot be contemplated without weeks of lead time for reassembly. Dedicating a specific period of time during each cycle to its inevitable inactivation for major overhaul insures the availability of a given number of carriers in a completely ready status. It is realistic to plan for at least nine months of overhaul in every four years.

Based on the foregoing, a peacetime requirement for five carriers continuously deployed in the Atlantic and Pacific generates an overall requirement of at least fifteen.

NOTES

1. James L. George, ed., Problems of Sea Power As we Approach the Twenty-First Century (Washington, D.C.: American Enterprise Institute, 1978), p. 151.
2. Paul H. Nitze, Leonard Sullivan, Jr., and the Atlantic Council Working Group on Securing the Seas, Securing the Seas: The Soviet Naval Challenge and Western Alliance Options (Boulder: Westview Press, 1979), p. 417.
3. Ibid., p. 418.

A FLEET FOR THE YEAR 2000

Ultimately, an effective naval strategy depends on the availability of resources to implement it. The Chapter examines force sizing vessels in light of the Navy's multiple missions in the context of budgetary constraints. It suggests a series of priorities for naval planners within a shipbuilding budget that, in fact, is presently inadequate.

A FLEET FOR THE YEAR 2000

I. INTRODUCTION

The nucleus of the fleet of the year 2000 exists today. If no combatant ships were built between 1980 and 1999, we would enter the 21st Century with over 350 ships in the fleet. So the point is that changes to the fleet will be marginal and evolutionary, not massive and revolutionary. How the fleet does evolve will be a function of culture, budgets, technology and the threat. To the extent that a nation receives the type and degree of security it deserves, culture - the values of our society - will determine who our leaders will be, what international policies we pursue, what military posture we shall insure.

This is important to bear in mind. The future of the U.S. Navy is not determined by any one individual, no matter how powerful, or by any one Administration, or Executive Branch agency or committee of Congress. The U.S. Navy will evolve in accordance with the national mood; and the mood of this nation is not one of gravity as regards the national security situation. This is not to imply that the mood is frivolous. It certainly is not. Many serious-minded and influential Americans do not perceive our naval forces as facing a long-term problem. They sincerely believe that, whatever the level of the Navy budget or the numbers of

ships authorized, any potential problem could be averted by more sensible or frugal management by the Navy.

This view can be most rationally upheld by not assessing future trends in Soviet versus U.S. naval capabilities. Winning a war is not a major consideration in our force planning. We are designing a force posture which we think inhibits the Soviet disposition toward the use of force outside Eastern Europe. We seek deterrence by injecting an element of grave uncertainty into Soviet calculations of the net worth of military action. According to this logic, even if the Soviets believed they could prevail in a conventional or nuclear war, what stakes in a crisis would impell them to such drastic and possibly mortal action? To a large extent, the impetus for U.S. Defense budgets is to be a talisman of U.S. sincerity as distinct from real strength. This article is based on the premise that we will not fight a major war between 1980 and 2000. If we do and there is long lead-time warning of such a war, we will double or quadruple the Defense budget and seek to redress the deliberate reductions in certain mission capabilities which current trends indicate. If we do fight and there is not such heeded warning, at least we should not be guilty of deluding ourselves. The CNO, Admiral Hayward, has said repeatedly that, given the current trends, we cannot maintain overall naval superiority through the 1980s. On the other hand, the Chiefs unanimously endorsed SALT II, while their warnings that negotiations are

no substitute for strength appear heavily discounted. We do not want written of our nation one day what Churchill described as the attitude of English leaders in 1930. In The Gathering Storm , he wrote: "It is my purpose...to show...how the...war could have been prevented; how the structure and habits of democratic states...lack persistence and conviction; how no policy is pursued for even ten years; how the counsels of prudence and restraint may become the prime agents of mortal danger...."

In this article I will propose reductions in American capabilities to carry out some naval missions. I do so because I do not believe naval budgets will rise significantly in the future or that some fantastic "force multipliers" will present themselves. But we should not kid ourselves. The theme of this article is how best to accommodate the reality of less naval power. It is a reality of our own choosing.

II. THE CURRENT TREND IN RESOURCES

The fleet of the U.S. Navy in the 1990s will decrease in size and in capabilities. The President decided, in order to combat inflation, to limit real Defense resource growth to two or three percent per year. Real growth in Soviet military forces is 4-5% per year. Within the U.S. Defense budget, funding growth must be found for the MX missile, for theater nuclear modernization, for airlift for the U.S. Army,

and for NATO stocks. Consequently, some U.S. defense programs, especially naval forces, have been restricted to no real growth in order to free up adequate funds for other programs. So, on several occasions President Carter has worked to prevent Congressional efforts to increase U.S. naval capabilities, no matter how cost-effective the increase was. For instance, in 1979 Iran offered to sell four modified and improved DD-963 destroyers called DDG-993s, under construction in the U.S. The cost to the U.S. per ship was 40% under list cost. President Carter was adamant that at least two of the four ships should be scrapped rather than purchased. It required a personal visit by Senator Stennis to persuade the President otherwise.

In 1980 there are about 530 ships and 5200 aircraft in the Department of the Navy. To insure the same size fleet in the year 2000 would require an annual increase in the President's shipbuilding request of about 25% and in the aircraft procurement request of almost 100%. In my opinion, that increase will not happen under the present Administration or another Democratic Administration. It is doubtful if it would happen in full under a Republican Administration. The higher the total of deferred funding, the lower the probability the full monies will ever be obligated. Although faced with a steadily maturing threat, this nation, acting as a nation, has chosen to reduce steadily the portion of

its wealth devoted to the insurance of our national security. For the Department of the Navy, outlays in 1960 were 2.5 percent of GNP but by 1900 had dropped to 1.5 percent, a reduction of 60%. Given the current trend, in the year 2000 GNP devoted to Department of Navy outlays will be one percent, or 150% less than in 1960. Today the Soviet Navy spends more in like U.S. dollars on its programs than the U.S. Navy does on its programs. At current trends, by 2000 the Soviets will be outspending our navy by 85%. A gap of that magnitude is so unacceptable that obviously at some future point the Administration's insistence on no real growth for the Department of the Navy will be reversed.

It would be fallacious to argue that this gap is acceptable because U.S. technology permits us a capability increase of four percent per year - to match Soviet growth - at zero increase in real input resources. The facts are that college board intelligence scores in this country have dropped over the past decade, that productivity per man is increasing only slightly or not at all, and that the Navy has cut its R&D effort by 30% to procure ships on a decreasing overall budget. Technology has resulted in a sharp increase of tonnage per ship and real cost per ton. This is a trend in navies worldwide. In the U.S., the real cost of a 1000 ton frigate rose 400% in 10 years; in Japan, the real cost of a 5000 ton destroyer rose 200% in 7 years. This is partially due to habitability (air conditioning,

etc.) for machines as well as for men. It is also due to the trend in the nature of warfare. The military forces of nations around the globe are decreasing in numbers as they increase in technological sophistication. There is more nostalgia than analysis in the oft-repeated bromide that we need more, smaller and cheaper platforms. The 2000-ship Navy of WWII would not survive a week in a modern conventional combat.

Defense Secretary Brown claims we are using our technological superiority to more than compensate for Soviet numerical superiority. This compensation is suspect if the technological base is being reduced along with the fleet.

Given these U.S. dollar trends contrasted with an increasing threat, it is a delusion to believe U.S. naval capabilities can remain undiminished.. Why, then, do we persist with this trend? Basically, because its consequences are not recognized. There is no institutional mechanism within the bureaucratic environment of the U.S. Government for developing a long-range plan for the Navy and comparing that with our security goals and Soviet capability trends.

III. THE BUREAUCRATIC ENVIRONMENT

The structure of our national security organization thwarts any efforts toward long-range planning and budgeting. When President Nixon took office, he commissioned a study of our global military strategy, called National Security Study Memorandum (NSSM) 2. The study recommended a strategy change from planning to fight simultaneously against both

the Soviet Union and China, plus a contingency - the "2 & 1/2 War" strategy - to planning to fight either the Soviets or the Chinese - the "1 & 1/2 War" strategy. But the monies and forces the Defense civilian analysts believe adequate for "2 & 1/2 Wars" were held by the JCS as barely adequate for "1 & 1/2 Wars." The point is that determining strategy will not determine how much is enough. Today, Secretary Brown and the Navy agree on a comprehensive set of naval missions (Chart 1). They disagree by several billions of dollars on the forces adequate for the missions. However, there is no unclassified proof of such a disagreement because Dr. Brown has avoided setting any long-range naval force goals at all presumably because the forces would appear shockingly small or grossly underfunded. A substantial increase in naval force funding will allegedly be approved -- beginning in 1986, when a different administration will be in office.

Dr. Brown did inherit a long-range shipbuilding plan from the Ford Administration. It was promptly cut in half. Mr. Russell Murray, Brown's Assistant Secretary for Program Analysis and Evaluation (PA&E), labelled the plan a political gimmick, not worthy of serious scrutiny. It apparently mattered not that the plan had been briefed to President Ford by Mr. Peter Aldridge, who in 1976 was the Assistant Secretary for PA&E who recommended Mr. Murray as his

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replacement. So there is ample precedent to suggest that the next administration could treat Dr. Brown's plans as Dr. Brown has treated those of Defense officials before him, in which case Dr. Brown's 1986 largesse to the Navy would count for exactly nothing.

The disposition of Congress is equally toward the short-term. Ships and aircraft are authorized on an annual basis. How Congress relates its annual deliberations to overall force goals is anybody's guess. It is clear, however, that there are almost as many shipbuilding preferences in Congress as there are Congressional waterfront districts and influential senators. Since Vietnam, there has been a steady dilution in authority, both within the Executive Branch and within the Congress. While a compromise plan seems the obvious result, there is no institutional mechanism for addressing a plan of any sort. Congress authorizes funding of line items on a yearly basis; Congress does not address the force goals those items supposedly advance.

By far the most powerful force working against acting in accord with a long-range plan is the need to adapt to the environment of the real world. Change comes about, and a good manager adapts to the change. The Soviets deploy an improved class of submarines, more U.S. war ships are assigned to the Mideast Force, Great Britian reduces the number of

frigates pledged to NATO, a new sonar performs better or worse than expected, Marine forces are sent to the Caribbean - to each of these changes from the expected the manager will respond, with a consequent alteration to the long-range game plan. It is the plan which must be altered, not the environment. Former Defense Secretary James Schlesinger said long-range planning cannot be like taking a Cook's tour of Europe: e.g., today is Friday, so this must be Belgium. Rather, the plan must resemble the Lewis & Clark Expedition. One needs a goal - be it to reach the Pacific Ocean or to have an adequate fleet for the year 2000. One has a general plan but as one proceeds and time goes by, one adapts modifies, detours, backtracks, twists, turns, dodges and moves ahead. The plan is a rough road map. Where reality proves the map wrong, the map is corrected. One does not, however, throw the map away or abandon the journey.

In sum, there is today no long-range U.S. naval plan. In 1978 Secretary of the Navy Graham Claytor, acting under the direction of Dr. Brown, commissioned a Navy Force Planning Study, called Sea Plan 2000. Dr. Brown endorsed the set of naval missions that the study articulated. Most analysts and naval officers agreed with the study's net assessment: namely, that ASW and convoy protection were improving, that massed aircraft with air-to-surface missiles

were the worst threat, that the U.S. Navy's weakest chink was area AAW and that Aegis, the cruise missile and non-CV Surface Action Groups should receive funding priority. Dr. Brown, however, refused to endorse the study's recommendation of about three percent per year real naval growth. That, he said, was unnecessary in the short-term.

Thus, as matters stand today, the U.S. Navy is without fleet goals for the year 2000, has no near-term growth, and faces a growing threat.

IV. THE DOMESTIC/FOREIGN ENVIRONMENT

Unfortunately, the year 2000 is not too far away. Most of the readers of this article can remember with discomfiting clarity events of 20 years ago. Where projections for 2000 were once the exclusive province of social observers like Herman Kahn, now even pedestrian technical writers such as I indulge in them. Based on the trends of the past 20 years, we face a future of hazy promise and clear problems. The prototypical American Dream has been for the family, as the fundamental social unit, to prosper through decency and hard work, with the parents able to reasonably hope their offspring would enjoy an even better life. In material terms, the Dream is threatened by the reality of inflation too high, productivity too low and a continuous drain of dollars for oil. The basics of life - food, shelter,

energy - are demanding a larger portion of the family earnings. Housing prices make questionable the long-term viability of single dwelling units for middle income families. The transfer of income through taxation from one group to another continues on an upward slope, as do state and local taxes, propelled by inflation. For Middle America the cherished hope of excellent higher education (and eventual greater prosperity) for the brightest of their progeny is flickering. Increasingly only the poor can be provided and the rich can afford private higher education. The rate of American prosperity - the "quality of life" material index - will edge up only slowly over the next decade.

The spirit of America lacks self-confidence and self belief. This was most clearly manifest in our balkanized and faltering behavior in creating the tragedy of Southeast Asia. Gone forever is the pervasive factor of the immediate post-WWII era - the overarching awesomeness of American political, economic, military and moral might. The President of Mexico accuses us of deceit and is indignant that we balk at his sales price for natural gas. The Soviet use of Cuba as a base has forced an American naval patrol of the Caribbean, signalling a small but not trivial shift in political initiative and in the global balance of power. The leader of Iran calls us a "wounded snake" and slaps a surcharge on the sales price of his liquid gold. We abrogate our defense treaty with Taiwan in favor of China, only to

have China reciprocate by invading Vietnam. The Chancellor of West Germany gibes at dinner parties about American vacillation, while the Defense Minister of Israel states that we lost Vietnam and do not have a coherent Mideast policy. Forty-four percent of Americans believe the Soviet Union will grow stronger next year; only 22% of our citizens believe our nation will grow stronger.

Admiral Zumwalt has asserted that Kissinger's foreign policy of establishing multiple "linkages" with the Soviet Union (think of the Liliputians tying down Gulliver) was based on a belief that America was weak. One does not necessarily have to accept that conclusion to observe that American leadership in future world affairs will be spotty and sporadic. Others will not accept it easily. It will be tested. There will be crises in which American force will be deployed and used. American access to foreign bases will decrease as the leaders of host nations fear Soviet reaction, domestic objections and the chance of American abandonment as domestic objections rise. Conversely, the Soviets will operate from more overseas bases. There will be U.S. political pressures to increase the visibility of U.S. battle groups and Marine amphibious assault units in the vicinity of the Soviet bases.

My guess about the future is that the unpleasant unexpected in a military confrontation will happen between 1980

and 2000. It will be a shock to America. Among our responses will be a firmer foreign policy and substantially strengthened defense forces.

My fear about the future derives from history. It is moot whether two superpowers can coshare or cohold as equals martial authority on a global scale. The status of the Soviet Union derives from its military might. A decade ago senior U.S. officials theorized that global stability would be enhanced by improved Soviet nuclear power, resulting in mutual secure second strike forces and a shared doctrine of mutual assured destruction. Today no U.S. official would advance such a theory.

In sum, the future environment will not be as benign to American economic and political interests as have the past three decades.

V. MANPOWER FOR THE FLEET

The availability of qualified personnel to man a sophisticated fleet in the 1980s probably turns on some form of draft conscription. Scarce volunteer manpower will adversely affect the Army before the Navy. But externally observable measures of personnel effectiveness or ineffectiveness will be more manifest on board ships than in infantry battalions. Because qualified military manpower is a national, not a naval, problem, it will not be dwelled upon in this article. A return to the draft would signal a change in the direction of American culture, because it requires sacrifice, some pain, a view of the common good, and would be stoutly opposed by several powerful special interest groups. A draft cannot result from the efforts of a few leaders like Senator Nunn and Dr. Schlesinger, whom some view as a special interest group. Only when national security again becomes a public interest - as four successive presidents have sought to make arms limitation agreements a public interest - will draft eligibility as a requirement of some citizens in a democracy be restored.

VI. FUTURE NAVAL MISSIONS AND FORCES AT CURRENT BUDGET LEVELS

Will naval missions change, increase or decrease in the future? In keeping with the trend in net naval power, they should decrease. But no one wants to urge that.

Instead, there are proposals for new and different naval forces. For instance, Senator Hart has urged the building of a V/STOL fleet on small-deck carriers. This would cost an additional \$15B to \$30B. Admiral Zumwalt has urged the same plus cruise missiles on all U.S. combatants. Add another \$5B. Admiral Hayward has been equally enthusiastic about cruise missiles and is the first CNO while on active duty to urge non-CV Surface Action Groups. To implement such ideas, where is the money to come from, if the Administration holds the Navy to no real growth? It is relatively easy to suggest a future fleet, if the budget goes up.

The remainder of this article, however, will be devoted to what the Navy could do if the budget does not increase.

If we as a nation are determined not to match the increasing threat by higher budgets and if technology cannot be assumed as the *deus ex machina*, what naval posture suggests itself? And how would that posture differ from the current trends?

Let us look in turn at each naval mission and associated set of forces, beginning with the most important.

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- Deterrence of Nuclear War. The Soviet Union espouses a set of values and some objectives antithetical to our own. This will remain the case and will lead to future crises. In the 1962 Cuban Missile Crisis, the essence of American leverage rested in a nuclear arsenal yielding to us strategic superiority, in that the potential nuclear damage to the Soviet Union far exceeded that to the U.S. A decade later, due to Soviet initiatives and to American restraint, we had reached a plateau, called Essential Equivalence, in assessments of expected mutual assured destruction. Many U.S. civilian and military officials had encouraged the Soviet ascension to the plateau, seeing it as some sort of permanent Nirvana, where American adventurism would be deterred by Soviet power and where Soviet paranoia and hostility, provoked by a quest for security, would be subdued. Based on wishful thinking, this theory had, among other problems, a fatal flaw: the Soviets did not believe it. Instead, the Soviets have ongoing strategic programs which climb beyond Essential Equivalence toward Soviet Strategic Superiority, as measured by a gross disparity in Urban/ Industrial damage resulting from a Soviet-initiated strategic nuclear exchange. According to Admiral Hayward, within two years the Soviet strategic posture will accrue to them a credible first-strike capability against our land-based ICBM force.

This trend apparently is of serious but not crucial concern to our military and civilian policymakers. In fact, one has to read very carefully Defense Secretary Brown's FY79 and FY80 Posture Statements to detect the trend at all. In FY79 Dr. Brown indicated that at no future time would a Soviet first strike gain them an advantage; in the FY80 Statement suddenly the same type of measuring system showed a significant Soviet advantage, beginning in 1982. Our planned military response is to develop and deploy at a measured pace the MX land-based missile, so that by 1987 we correct the Soviet advantage. The clear implication of this time lag is that we can tolerate the Soviet nuclear advantage for at least five years because the advantage is not serious enough to interfere with military or procurement business as usual.

President Carter and Dr. Brown decided upon MX in a mobile-basing mode rather than the improvement of accuracy and throw weight in a submarine-launched ballistic missile called Trident II. The current trend, then, is for SSBNs to remain countervalue and not counterforce weapons. This presumes our SSBN fleet remains relatively invulnerable and that we actually procure the MX, which will in turn threaten Soviet fixed-site ICBMs. This should drive the Soviets to a mobile missile system, or to negotiations to limit the MX. If the President remains firm in his MX decision, the Navy

would have neither the money nor the permission from the White House to develop an accurate Trident II. The number of SSBNs will drop from 41 in 1980 to about 30 by 2000. The Navy probably will soon propose a new type of SSBN, which will be smaller and less costly than the 19,000-ton Ohio class. At present, the one-per-year procurement of the Ohio class (with Trident I missiles) takes over 20% of the five-year shipbuilding budget. A reasonable Navy goal would be to replace the Ohio class with a new design which would lower costs to about 15% of the shipbuilding budget.

A second naval-related nuclear issue is the future of the long-range (beyond 600 kilometers) SLCM (Sea-Launched Cruise Missile), which can have either a nuclear or conventional warhead. In signing SALT II, the President pledged not to deploy any SLCM until after 1982. Privately, many Defense officials say the Navy will never receive the SLCM, at least not in significant numbers. The Navy talks a fair to good fight for SLCM. But the Navy agreed to SALT II without seeking any assurance about SLCM from the President. In 1976 Dr. Kissinger had a Soviet agreement allowing SLCM. Today the Navy has no such agreement.

SLCM would be useful because it would enhance deterrence of Soviet nuclear strikes at sea by threatening retaliation from the sea against Soviet land-based systems. SLCM limits collateral damage to the attacking force at sea and, due to high accuracy and low yield, to the country under attack as well. Placed on 60 submarines and 100 surface

combatants, SLCM would greatly complicate Soviet targeting problems and reduce any Soviet incentive (perceived gain) from a first strike. The vulnerability of the SLCM platforms is low, as is the cost of SLCM.

SLCM, however, is a nightmare in terms of verification. Since the warhead can be nuclear or conventional, all SLCM platforms must be considered nuclear. Since U.S. sea-based SLCMs could strike the Soviet Union, the Soviets would consider them strategic systems and insist their platform count under the SALT ceiling for strategic nuclear delivery vehicles, as do U.S. aircraft modified to carry air-launched cruise missiles. The President has promised to reduce the number of nuclear weapons; SLCM implies an increase.

The Soviets have currently deployed or stockpiled thousands of cruise missiles on hundreds of ship, submarine and aircraft platforms. Some, like the SS-N-12 on the Kiev and the AS-4 on the Backfire bomber, are much larger than our cruise missiles. We and the Soviets claim none of these missiles can exceed 600 kilometers in flight because Soviet technology lags ours. But certainly by 2000 (and probably by 1985), if SLCMs are not constrained, the total number of Soviet (as well as U.S.) long-range nuclear-capable systems will have increased dramatically. All SSNs will be SSGNs. The threat to targets in the continental United States will increase correspondingly. The Navy can expect heavy pressure

from our Strategic Air Command, which will not want any Soviet SSGN within the 1000 fathom curve. The former VCNO, Admiral Worth Bagley, has written that the U.S. should exert pressure to push Yankee-class Soviet SSBNs away from our shores, presumably because they threaten a first strike against some SAC bases. In similar fashion, Soviet SSGNs would be a threat. While the SLCM is slow, it is also extremely accurate, has a low radar cross-section and flies at low altitude. It is doubtful if we have plans - and certainly no programmed funds - for a radar/anti-missile system in CONUS to cope with the SLCM threat, once it is pointed toward us. It is equally doubtful the U.S. Air Force would ignore the threat, or tolerate its growth if it could be curtailed by negotiations limiting U.S. SLCMs. Given these factors - Soviet opposition, verification, Soviet systems, possible USAF opposition, probable White House and arms control opposition - if the Navy does not fight as hard for SLCM as the Air Force did for MX, SLCM will never be deployed in meaningful numbers.

In addition to SSBNs and SLCMs, a third aspect of nuclear deterrence is strategic ASW, or the ability of the U.S. Navy to destroy Soviet SSBNs. Dr. Brown has said this is a U.S. advantage contributing to Essential Nuclear Equivalence. By 2000, if not by 1982, this mission will probably be non-existent. The range of the new Soviet SLBMs, such as the SS-N-8, enables the Soviet SSBNs to remain in home waters, presumably behind multiple barriers if war seemed imminent.

In sum, the U.S. SSBN seems destined to remain a countervalue-only weapon. Its costs can be reduced. It presumably will remain invulnerable. The SLCM has promise, particularly in conventional applications. It can also help deter Soviet initiation of nuclear war at sea. But because SLCM creates all kinds of problems for our arms control goals, the odds favor its severe constraint. Finally, whatever our 1980 capability in strategic ASW may be, it will fast fade as the Soviet SSBNs increase the range at which they can fire.

- Maintain a Worldwide U.S. Naval Presence. It is against the backdrop of the nuclear balance that the daily events of the Soviet-American competition take place. The importance of that nuclear balance can never be forgotten or taken for granted. Once, however, that condition for stability - a satisfactory nuclear posture - has been satisfied, other conditions must be fulfilled. Primary among these has been a set of naval forward deployments in order to reassure allies and to deter hostile adventurism in sensitive areas. Our statesmen assume there is a strong and causal relationship between our naval force presence and regional stability. It should be emphasized that such deployments are not a function of naval budgetary gamesmanship or organizational inertia. They are determined by the Secretary of Defense and by the Secretary of State.

Since 1970, the U.S. Navy and Marine Corps have been seeking to reduce the rate of forward deployments. At least Secretary of State Kissinger was consistent; while insisting on a high pace of forward deployments, he also was concerned about maintaining an adequate fleet and urged higher Defense budgets. Today, the situation is different in one aspect and the same in the other. It is the same in that, after the 1979 turmoil in the Persian Gulf, the Administration sought to stretch naval forward deployments to display American resolve in the region. When a squadron of unarmed F15s failed to impress anybody, the Administration followed with a nuclear-powered carrier. After the flap over a Soviet brigade in Cuba, the President ordered a Marine battalion to sail into the Caribbean. It is different in that Administration officials concerned with foreign policy consider the future of the fleet as a mundane budget issue concerning which they should be neutral.

Even at the current budget level, forward deployments of four carriers and three marine battalions can be sustained for the next 20 years. But the fighting power of full battle groups cannot be sustained. The cruiser/destroyer fleet faces bloc obsolescence. Because of this, the Navy should publicly request a sharp reduction in deployments in order to free up funds for maintenance, for investment and for combat supplies. The Navy, and especially

the Marine Corps, should ask that its officers and men be treated equally with those of the Army and Air Force in terms of time away from home and on unaccompanied assignments. If the Navy's net worth to national security does not merit any real growth in the future, why should the administration not be willing to take now the reductions they are forcing on the next set of policymakers?

The reason for such unwillingness is twofold. First, reductions are not seen as prudent. They might well signal weakness to our allies. The absence of American naval force would be an added incentive for increased Soviet forward deployments. Second, the reductions are not seen as required because the number of CVs will remain constant through 1999. Although Mr. Brezinski and other Administration officials lobbied in 1978 against the procurement of a CVN on the grounds that it was vulnerable as well as needlessly costly, there is a tendency to equate a carrier with American naval "sufficiency" in the region. That is, the carrier alone is sufficient to manifest U.S. steadfastness and to outshine Soviet combatants in the peacetime competition. This presumes that our allies are unsophisticated and do not apply Mr. Brezinski's discount rate for carrier combat ineffectiveness.

Since political officials in any administration will be more interested during peacetime in the symbolism than

the strength of military forces, there is little likelihood our naval forward deployments will be reduced. But the U.S. Navy should persist in warning that we are headed toward a crisis in which we will blink first, because a carrier is only one component of a credible battle group.

- Deploy Battle Groups and Marines to Contain Crises. A primary use of battle groups, to include VP and SSNs and underway replenishment, has been to insure overpowering sea control at the scene of a crisis, dampening any Soviet disposition for involvement and setting the stage for American projection of air or ground power. The numbers and capabilities of Soviet V/STOL carriers and cruisers, with long-range missiles, are increasing. Our battle groups must contain a carrier for offensive firepower. No U.S. combatant has a long-range antiship missile. If this state of affairs persists, with all the U.S. firepower eggs in twelve carrier baskets, there will be future occasions when the Soviets can retain strong sea power forces in the areas where we are strong, such as the Western Pacific and the Mediterranean, and simultaneously dispatch elsewhere powerful SAGs - Surface Action Groups with dozens of long-range missiles - or six or eight V/STOL or conventional carriers. The notion of the "territorial imperative" is not empty nonsense. Nations, like people, go with winners and with those perceived to be gaining rather than losing power. Given the trend established by the past three five year shipbuilding

programs, we are facing with 90% certainty a future in which the Soviet Union will be able to dispatch more sea power to a crisis region than can we, unless we denude other regions of our standing commitments. On the one hand, we have locked ourselves into a set of rigid commitments toward Japan and our NATO allies. On the other hand, we are not keeping pace with the Soviets in designing task forces.

Whether this net trend in crisis-capable naval forces merits a programmatic redressal costing billions of dollars depends on a pivotal foreign policy assessment: is limited war with the Soviet Union a possibility against which monies should be spent? The current Administration believes the answer is a qualified yes. It is prepared to spend billions for a "Rapid Deployment Force" so that U.S. land forces can, at the least, disembark from an aircraft in a crisis-torn nation as quickly as Soviet forces can (presumably at a different airport). For instance, President Carter explicitly said the "Rapid Deployment Force" was intended, among other things, to respond to any move by the Soviet brigade in Cuba. The old saw of "fustest with the mostest" has been shortened to "fustest." Presumably the Soviets would be deterred by our Roadrunner speed from entering a region or, if in the region, from taking military action.

What, however, if deterrence fails? It is conceivable that the mutual fear of escalation could initially limit the geographical boundaries of a US-Soviet land force engagement. The territorial frontiers which separate the PACT and

NATO forces could remain unviolated. But at sea there are no established lines of demarcation. Yet one cannot have a battle on land without involving sea-based forces. One is therefore tempted to curtail discussion of limited US-Soviet war by declaring that any such war would quickly be global. But a President would take desperate measures to limit any such conflict, so it may not become global. Perhaps, then, the wisest U.S. defense policy - although not fiscally realistic - is to hold an edge of strength at each level of conflict.

This was the McNamara Doctrine, circa 1962. It has subsequently been shaded as, after Vietnam, we have steadily reduced the amount of our national wealth devoted to defense, and as Soviet power has risen. It is evident that the Soviets consider themselves and are acting as a world, not as a continental power. It is equally evident that they are developing projection forces - naval forces, airlift, air defense units, marines - proportionate to their expanding self-image. In 1980, any U.S.-Soviet faceoff in a nation contiguous to a Soviet land border would favor the Soviets. Conversely, any faceoff in which the Soviets had to use the seas for any reason, such as supply, would favor the United States. As a simple rule of thumb, we should procure forces to insure that current power balance does not tip unfavorably for us between 1980 and 2000. It is my assumption that

the monies for additional U.S. task forces primarily designed for containing crises rather than fighting a NATO war must be funded by shifts within the Navy budget. Carriers for such task forces are too expensive. Non carrier task forces require long-range anti-ship missiles and targeting means, either on-board helicopters or Remotely Piloted Vehicles. This entails a new class of ships, such as a DDGX, with SLCMs. Also required is antimissile defense against a barrage from the Soviet task force. This entails the DDG 47 Aegis class with its phased array radar guiding SM2 surface-to-air missiles. In addition to towed array for the surface combatants, one or two SSNs in direct support would be prudent for ASW.

The assurance of U.S. naval superiority at the scene of a crisis is one task. The U.S. capability to affect the outcome ashore is another crisis-related issue. Here the trend has been to ignore U.S. Marines in amphibious ships in favor of expanding our airlift capabilities. The rationale for reducing the amphibious lift is twofold. First, in a major war assaults like Iwo Jima will not recur. Second, ships are too slow to respond to crises. However, given the billions we spend on intelligence, we should have warning of crises. And indeed we do. Given warning, a president is much more apt to dispatch seaborne forces toward the crisis area than he is to fly in U.S. land or air forces. Even a casual glance at the history of U.S. crisis responses from

1946 through 1979 confirms this. Shipborne forces come as a package ready to fight, with about four tons of supplies per man and a secure resupply line. Airlift forces are useful for combatting terrorists but serious combat cannot be entered until supply stockages reach at least two tons per man and a secure resupply line is established. Airlift forces rely on airfields, which can be closed by the mere threat of opposition. This happened in the evacuations of both Phnom Penh and of Saigon. The plans were for airlift; the last-minute prudent necessity was for sealift.

Despite the historical utility of seaborne projection forces, the Marines have faced rough budgetary sledding for four reasons. First, the share of the USMC budget devoted to tacair has crept steadily upwards. Marines are fundamentally viewed as infantry shock troops. So there is a belief that marine land forces can be modernized by re-allocating funds from marine air. Second, Defense planning decisions reflect an intuitive belief that the future will not be like the past. Presumably we will not have warning of crises which, when they do occur, will require the President to commit U.S. land forces within a week. In my opinion, this intuition, which logically results in a "Rapid Deployment Force," is flawed. It is highly doubtful if any future president of the U.S. will so precipitously commit U.S. land forces on a large scale. While during peacetime

the desire for adequate budgets leads to military lip service for "rapid deployment," in a deadly crisis it is doubtful the Joint Chiefs will recommend the piecemeal airlift commitment of U.S. land forces. The third criticism of marines is that the amphibious assault is obsolete. So additional assault ships need not be bought. The fourth criticism is that the marines have neither a specific geographic sector to defend in NATO nor an explicit non-NATO mission.

As a consequence of these factors, in recent years the amphibious ship goal was reduced from 133% of MAF (a Marine Amphibious Force or reinforced division) to 115%. No money through 1984 is planned for new assault shipping.

Secretary Brown, however, apparently has authorized two sensible modifications to the traditional USMC missions. First, provided SACEUR can be persuaded to release a Marine Air-ground task force from his wartime contingency reserve force, the marines will assist in the Defense of Norway as a NATO theater, and war materials will be stockpiled there. This places marine attack aircraft within 300 miles of the Kola Peninsula. This in turn will force the Soviet Union to pay more attention to the North Flank and will divert PACT resources from the Central Front. Second, DoD has asked the marines to examine additional shipborne force options, independent of assault shipping. Some analysts believe that commercial

ships can be satisfactorily modified for administrative landings at one half the cost of procuring assault ships. As an incentive, DoD is offering additional funds. As a threat, there is the chance that the U.S. Army would forward deploy on ships, if the marines refused to compromise. In essence, this is a resurrection of the FDL (Fast Deployed Logistics) ship of the 1960s. It would provide equipment and manpower for a brigade, either to augment our strength in the Indian Ocean and in the Caribbean or to respond to a crisis. By this means, the marines in 1990 could possess more shipborne mobility than in 1980. The cost will be the gradual atrophy of the assault capability.

Carrier air also, of course, is used to influence the outcome of crises ashore. For instance, in 1970 three carriers were deployed to threaten openly the Syrian armored column poised at the border of Jordan. Through an extended overhaul program, twelve deployable carriers will be sustained through 2000. This represents a substantial crisis capability, if the Soviet Union is not involved. As a rough rule of thumb, two carriers can provide the fighter cover and close air support for a U.S. division.

If the U.S. performs poorly in a series of crises and fails to support allies, escalation to WWIII by Soviet miscalculation of the West's resolve could follow. To deter WWIII, strength and skill in crises are required.

Necessary also for the WWII case are other sets of naval forces less evident in crises than are carriers and marines. In fact, the most publicized set of naval forces for WWII relate to protection of the SLOCs, or sea lines of communication.

- Protect Convoys Along SLOCs. This antisubmarine mission is generally divided into two components - area ASW and convoy defense. Area ASW refers to SOSUS (sound under-water) stations of fixed hydrophone arrays to detect submarines, mobile hydrophone arrays, mines, maritime patrol aircraft (MPA) with sonobuoys and torpedoes and diesel-electric and nuclear submarines. Area ASW employs barrier and station techniques to destroy Soviet submarines transiting to or from the major SLOCs. Convoy defense refers to MPA, some allied SSNs and frigates, some with ASW helicopters and antimissile defenses, to escort the convoys.

Currently, the Administration is placing heavy emphasis upon convoy defense. The guided-missile frigate (FFG) used to protect convoys is, at \$200M a copy, the least expensive deep water combatant in the U.S. fleet. By requesting that Congress authorize five or six FFGs a year, the Administration keeps its shipbuilding request in double digits. For the Administration to reduce the numerical request for ships any lower than it has already done would invite sharp Congressional rebuke. Yet on the one hand the FFG lacks the antimissile potential to contribute effectively in a battle group. On the other hand our more expensive cruiser/destroyer

fleet for the battle groups faces technological and material obsolescence.

One option, then, is continue funding for MPA and to cease FFG procurement in favor of fewer platforms for a different mission. The major convoy route in WWII presumably would be across the mid-Atlantic to the Benelux ports, while the battle groups would be used to reinforce allies and to threaten Soviet forces on the Northern Flank, in the Mediterranean, and possibly in the Persian Gulf and the Northwest Pacific. The rationale for curtailing the U.S. role in convoy defense is threefold. First, U.S. ASW is improving. Deputy Secretary of Defense Graham Claytor has referred to "sophisticated detection devices and computers" such that "the qualitative edge we hold over the Soviets in both equipment and personnel is awesome". Second, area antimissile defense for battle groups in high threat areas is poor. The cruiser/destroyer force must be modernized to take advantage of promising antimissile technology. Third, SLOC protection assumes a NATO war with our allies fully involved. Our allies have about 180 frigates and we are building from about 75 frigates today to over 100. Because the allies also have several in-shore missions for their frigates, it is generally assumed they would escort seven convoys in the first month of a war and we would do the same. If we do curtail our FFG building program, we are essentially reducing our contribution by 25%, or from seven convoys to

five. We will be asking our NATO allies to increase their shipbuilding, where for the past several years we have urged them to increase their land forces, implicitly at the expense of their naval forces. We have assured our NATO allies that our shipbuilding program was robust and fully funded. They have voiced suspicions. Our curtailment of the FFG program may confirm the suspicions.

On the other hand, it may not. Since the Administration has no stated goals or plan for the U.S. Navy, it cannot be accused of changing the plan. Convoy protection against submarines is in comparatively better shape than other naval warfare tasks. It is also a highly unlikely task, since it assumes a global, conventional war which persists beyond one month. It is prudent of the U.S. to have such staying power in NATO. By curtailing the FFGs, we pay a cost in an increase in potential shipping losses. But, given a fixed budget and a growing threat, some decrease in net capabilities for some missions must be expected. The most probable threat to America is not a conventional WWII. Rather it is ineptitude at influencing or controlling critical world events. Partially such ineptitude would be ascribable to a deterioration of our net nuclear power, and partially to a lack of relevant conventional forces, including naval forces. The current trend is to strengthen our SLOC forces and to decrease the capabilities of our

battle groups and SSNs. What I am proposing is that this set of priorities be reversed because our battle groups and SSNs are more useful for containing crises, for directly challenging Soviet forces, and for reinforcing our allies.

- Reinforcement of Allies Distinct from SLOC protection is the reassurance of American reinforcement of allies around the globe. Because it is a predetermined task, convoys to Europe and Japan can be planned as a setpiece battle. The list of force requirements, however, would be staggering if one sought to cope in setpiece fashion with the potential crises and needs of our allies worldwide. Instead we have designed naval forces whose mobility makes them applicable in various theaters. More than in the SLOC task, these naval forces must be able to defeat Soviet missile-carrying aircraft.

It can be argued that convoys also face a threat from Soviet Naval Aviation (SNA). Our force planning, however, should be consistent with our negotiations agreements. In SALT II the Soviets agreed not to refuel the Backfire bomber or to "increase its radius of action," presumably by constructing bases on the Kola Peninsula or overseas. Since the SNA is transitioning to an all-Backfire fleet, surely we will object if SNA pilots are trained in refueling techniques. Given the location of current Soviet bomber bases, unrefueled Backfires under the terms of SALT II are not a prime threat to the mid-Atlantic SLOC.

In most other oceans bordering Eurasia, however, the SNA is the most serious threat to the reinforcement of our allies. To counter these bombers, fixed air bases at blocking points or mobile air bases (carrier battle groups) are needed. Both must be defended, since both would be prime targets for preemption. It is not clear how much we know about the costs and techniques for land-base defense. The costs, techniques and problems of battle group defense have been studied exhaustively. We know the capability of the F14 to destroy Badgers or Backfires is good to excellent. The serious concern is that the Soviets, through coordinated air raids, can launch so many missiles that shipborne antimissile SAM and gun defenses are saturated. The DDG-47 Aegis with its phases array radar working with inertial-guided SAM-2s is as much a breakthrough for anti-missile defense as the F14 was for long-range air-to-air intercepts in an electronic warfare environment.

Unfortunately, it shows the same sort of cost growth over simpler systems, too. For instance, the DD-993 guided missile destroyer built originally for Iran was priced at about \$350M. The DDG-47, with roughly the same tonnage (9000 tons), is priced at \$700M per follow-on copy. Curtailment of the FFG line would save a billion dollars a year. At least half that money could be devoted to surface combatants, beginning with an expansion of the DDG-47 buy,

now planned for ten authorizations through 1985. A goal of 24 Aegis ships in the 1990s would not be too ambitious. It would provide two first-line antimissile ships per carrier, or alternatively, serve as the command and fire-power nucleus for Surface Action Groups operating without carriers.

Although the Administration is determined to retain at least twelve deployable battle groups through 2000, it is popular to assert the future lies with land-based air because carriers are too vulnerable. Therefore investment to reduce ship vulnerability is throwing good money after bad. The trends, however, in alliance cohesion and receptivity to American force presence are such that we may have to decrease our reliance on land bases, especially as a counter to SNA. Supposedly the CVN rumored to be authorized by Congress in FY80 will be the last large-deck carrier. This sentiment may owe more to intuition than to analysis.

The Soviet trend is toward faster aircraft as missile carriers with farther standoff ranges. Those aircraft cannot be permitted to shoot until they score hits. Yet the U.S. trend in interceptors is far from clear. U.S. V/STOL carriers have much appeal, not least because they represent a "fresh idea" and sentimentally we favor innovation. How a V/STOL of reasonable size, however, can intercept a

supersonic Backfire hundreds of miles from the task force has not been determined. The intercept problem aside, preliminary studies indicate that about three small V/STOL carriers equate to one large-deck carrier but in aggregate would cost substantially more.

Early in a conventional war, it would be necessary to mass about four battle groups to combat the SNA. This limits us to one heavy task force in the Atlantic and one in the Pacific. One misstep would severely wound, if not cripple, our naval strike power and prevent reinforcement of some theaters. To hedge against this, an increase in sea-based air platforms would be prudent. But the request for another carrier of any type would be a lightning rod for dispute. So my guess is that, assuming a CVN is authorized in 1980, there will be a hiatus of a few years in sea-based air requests while the Navy and others sort out feasibility from desire.

However, the immediate and pressing need is not for more carriers. It is for antimissile defense - as discussed previously - and for a dispersion of naval striking power. This latter task is strategically related to applying pressure against the Soviets or any other potential enemy.

- Pressure Against the Soviets. Admiral Hayward has repeatedly said he wants a navy which is "offensively capable." The reason is to place enemy naval forces on the

defensive, thus making easier the tasks of convoy resupply and of reinforcement of allies. The maintenance of some clear warfighting advantages over the Soviets enhances deterrence and provides us some leverage in controlling crises. A prime U.S. warfighting advantage lies in our nuclear attack submarine- which, together with our SSBNs, are the most survivable ships in the fleet. Soviet nuclear submarines suffer from comparatively high radiated noise levels, of which our SSNs, employing advanced acoustic technology, can take full advantage.

Yet we are now requesting only one attack submarine per year, leading to an absurdly low long-term force level. Apparently plans are fairly complete for a new class of SSNs to replace procurement of the SSN-688 class, which costs over \$400M per copy. If a new SSN can come in for \$300M or less per copy we should aim for an annual authorization of three attack submarines. Some monies from curtailment of the FFG program of one billion dollars a year can be allocated here, too.

A second means of placing pressure upon an enemy is carrier-based strike aircraft. The present inventory of about 5000 Navy/Marine aircraft will decrease sharply over the next two decades. In FY80, the administration's request is for about 100 aircraft. This will barely cover peacetime attrition and is far short of any reasonable replacement

program. Many believe, however, naval air is ample and indeed too sophisticated for the crisis management task, while being too vulnerable and too few for a global war against the Soviet Union. But if properly applied, sea-based air could play a significant role in a global war. If all NATO nations keep their word to fight for one, then in such a war the Soviets, who are not ten feet tall, would have to fight simultaneously on three European fronts (Norway, Central and Mediterranean). They would have to protect Petropavlosk and cope with U.S. naval actions in the Pacific. A standard view is that we would employ battle groups to reinforce allies where the fighting was most fierce.

While that may well be the case, we should bear in mind a complementary case. The optimum strategic use of mobile air power is to dislocate the air forces of the other side and/or strike where a force mismatch favors us. By D+20 the toll of land-based air attrition will be very high. Depending on their prior use, the Atlantic battle group force alone might represent 30% of NATO's first-line TACAIR. Turned against a particular theater, the battle groups represent a strike threat which the Soviets would take very seriously. The mobility of battle groups enhance deterrence because they increase Soviet uncertainty of success: the Soviets cannot presume they could complete a campaign in any theater before the battle groups arrived. This most

particularly affects the force balances in the Persian Gulf and on the flanks of NATO.

Any campaign on the Northern Flank places allied strike aircraft within attack range of the Kola, the richest piece of small military real estate in the world. There are significant general purpose force targets on the Kola which cannot be hardened in time if we apply current DoD force planning guidance that war begins with less than a month's preparation by the Soviet Union. Submarine tenders, SSNs in port, HF/DF sites, generating plants -these stand exposed. SNA bombers must mass in order to strike battle groups. When they do mass, they in turn become a target. Soviet nuclear systems as well can be degraded by conventional attacks: SSBN tenders, SSBNs in port, missile handling and storage facilities, perimeter radars, etc.

Whether U.S. decisionmakers would in an actual war so use our power is one issue. Whether for deterrence we want to keep open such options for applying pressure against the Soviets is another issue, one that is implicit in discussions about positioning Marine A6 aircraft in Norway, in the procurement of land-attack cruise missiles and in Dr. Brown's 1978 statement that "we are still going to send naval forces to...Northern Norway [and] the Norwegian Sea." In this context the application of the firepower of battle groups would be taken by the Soviets as a very serious

matter. Before we allow our naval strike capability to atrophy, we should ask by how much we are relieving the Soviets of a defensive burden, simplifying their force planning and encouraging their view of the correlation of forces.

In addition to SSNs and strike aircraft, technology has offered us the opportunity of applying military pressure in a war against the Soviets by the means of many, comparatively cheap ground-launched and sea-launched cruise missiles. SLCMs might hurt the Soviets most on D-Day, while we have good targeting information and before they apply a learning curve and harden to offset the SLCMs light payload. Later in the war, SLCM appears extremely useful in attacking exposed SNA bombers and in pinning down Soviet interceptors while U.S. strike aircraft are inbound with heavy bomb loads. SLCMs can be carried in SSNs, which can lurk undetected at launch positions as D-Day nears. SLCMs for land as well as antiship attack can be carried on our surface combatants as well. The conventional cruise missile is sometimes called the Silver Bullet, because it is needlessly expensive and one can't afford to shoot it except at precious targets. Dr. Brown has questioned the utility of carrier aircraft on the grounds that one dollar in Soviet defense might offset five dollars in U.S. offense. Using the measure of one U.S. dollar to destroy the equivalent of five U.S. dollars

in Soviet systems, the target list for a conventional SLCM (and GLCM & ALCM) is large indeed. If we want to diversify U.S. naval offensive firepower, the cruise missile is the way to go. But, for reasons of arms control, I tend to doubt if we will do so, except on perhaps 20 or 30 platforms.

In summary, our shipbuilding (SCN) budget is about six billion dollars annually. The total amount is inadequate. In 1975, Defense Secretary Schlesinger projected an SCN budget of \$7.5 billion. In 1976, President Ford increased that figure to \$8 billion. However, assuming \$6 billion is all there is going to be annually, about \$1.4 billion can be reallocated by curtailing the FFG line and by procuring a smaller SSBN. By moving to a smaller SSN, it is possible to increase our SSN requirements to three per year. More DDG-47s for Surface Action Groups and for anti-missile defense would be prudent. A new destroyer with anti-missile capability--a DDGX-- is needed. It should be equipped with SLCMs. As for sea-based air, for now it is probably wise to stand with the force we have, awaiting political decisions about the cruise missile (if it is curtailed, more sea-based air platforms will be needed) and technological developments in USTOL and conventional aircraft.

Charts 2,3 and 4 attempt to summarize this paper. At a constant budget contrasted with an increasing threat, some U.S. naval missions must accept reduced capabilities. The

current trend is to increase the convoy/SLOC protection mission at the expense of the SSNs and battle groups, which are most useful for crisis management, for reassuring allies and for retaining potential pressure points against Soviet projection forces. This paper proposes reversing those trends and accepting a decline in SLOC protection capabilities.

CHART 2

Allocation of Future Naval SCN Dollars: The Current Trend Versus An Option

<u>SHIPS</u>	<u>CURRENT TREND</u>	<u>OPTION</u>
SSBN	25%	15%
SSN	9%	15%
USMC AMPHIB	0%	0%
FFGs	22%	0%
SUPPORT	12%	12%
DDG-47	27%	34%
DDG-X-SLCM	0%	22%
<u>TOTAL*</u>	<u>95%</u>	<u>98%</u>

* Do not add to 100% due to rounding

CHART 3

Illustrative Quantification of This Paper's Central Themes

	Current Annual Ship- building Trend		Option	
	<u>Number</u>	<u>\$M</u>	<u>Number</u>	<u>\$M</u>
SSBN	1	1500	1	900
SSN	1	520	3	900
FFG	6	1260	0	0 (1480)
AMPHIBIOUS SHIPS	0	0	0	0*
SUPPORT SHIPS	7	700	7	700
DDG-47	2	1640	2-5	2020
DDG-X-SLCM	0	0	2	1280
DDG 2 (CONV.)	3	660	1	220
<u>TOTAL</u>	16	6280	15	6280

* Procurement of commercial ships for a U.S.
Marine brigade to be paid out of the
"Rapid Deployment" contingency funds.

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